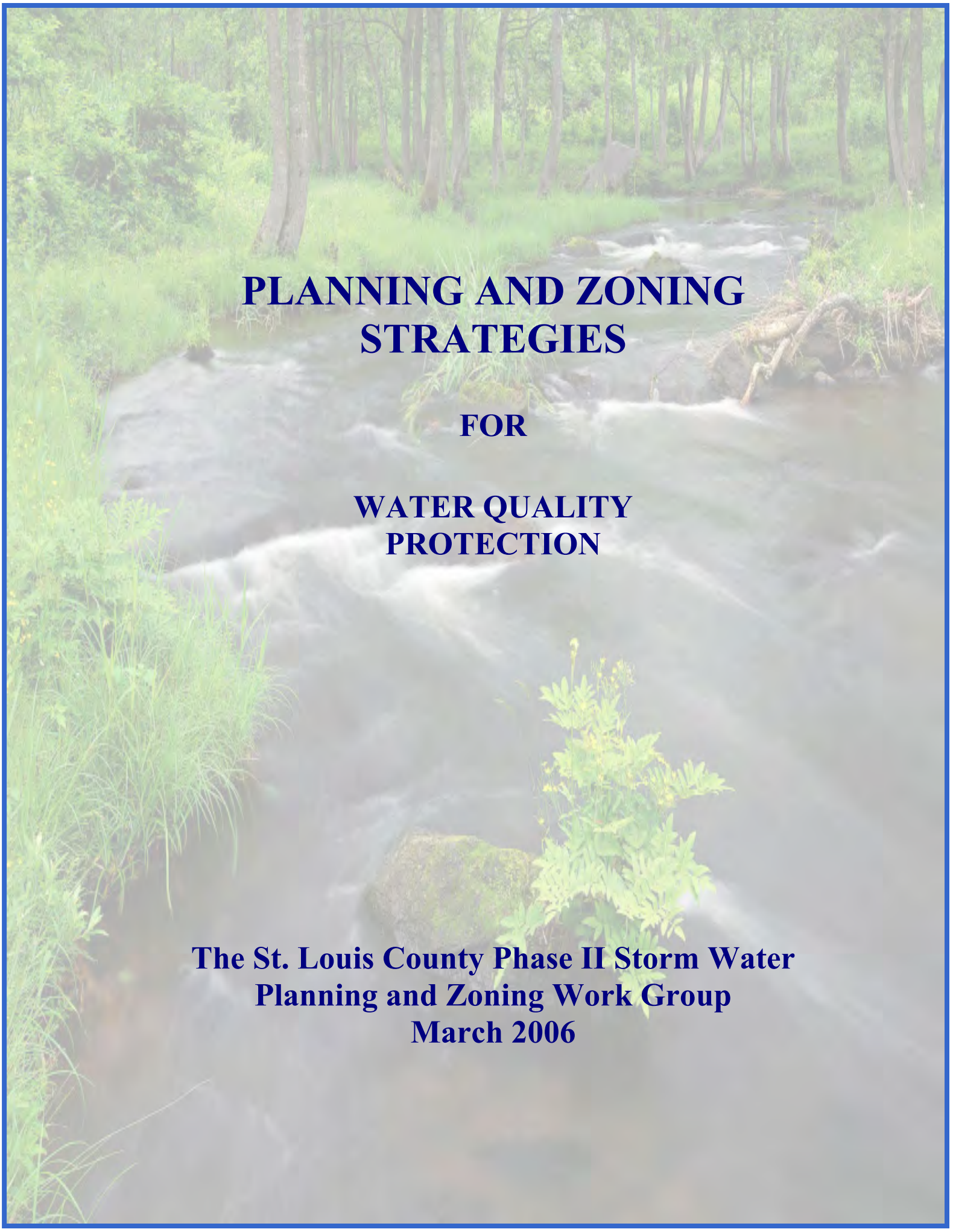

PLANNING AND ZONING STRATEGIES

FOR

WATER QUALITY PROTECTION

The St. Louis County Phase II Storm Water Planning and Zoning Work Group
March 2006

Introduction

This document is a compilation of strategies for improving water quality through effective planning and zoning in communities. It is educational literature to be used by communities to implement directed growth planning and zoning. Water quality is directly related to land use and development within the watershed.

Each section describes a strategy, the advantages and disadvantages of each, and identifies key decisions that need to be made in determining how to implement the strategy. Model ordinances are listed to provide additional information and ideas for implementing these strategies.

This document was developed to meet one of the goals of the 2002 St. Louis County Phase II Storm Water Management Plan. A work group was assembled to develop this information for the Phase II co-permittees responsible for the St. Louis Small Municipal Separate Storm Sewer System. Co-permittees will be asked to report on the incorporation of these strategies into their planning and zoning regulations.

The Phase II Planning and Zoning Work Group participants include:

City of Chesterfield
City of Fenton
City of Florissant
City of Kirkwood
City of Manchester
City of Maryland Heights
City of Olivette
City of St. John
City of Webster Groves
City of Wildwood
East-West Gateway Council of Governments
Metropolitan St. Louis Sewer District
Missouri Department of Conservation
Missouri Department of Natural Resources
St. Louis County

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1 Stream Buffer

Description of Strategy:

A stream buffer is a protected strip of naturally vegetated land along a stream. The purpose of a stream buffer is to physically protect a stream from the encroachment of development. Stream buffers are necessary to protect the integrity of stream ecosystems and habitats. Stream buffers also protect development by maintaining the integrity of the natural storm water drainage systems. Natural streams meander and change their channel over time, and structures built too close to a stream are at risk, or may require expensive remedial protection. The growth of trees in undisturbed areas benefits the community, and helps stabilize the stream from erosion. Stream buffers also serve to improve water quality by naturally filtering the runoff entering the stream.

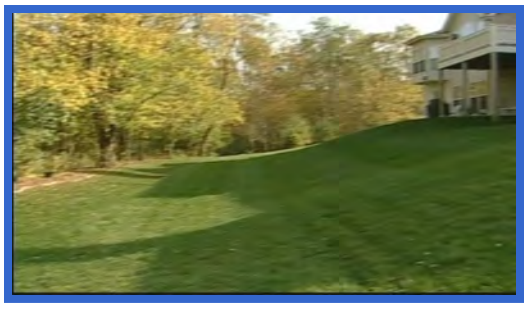
Applicability:

Stream buffers can be applied to proposed developments along streams by designating areas to be preserved for natural vegetation. Ongoing maintenance of the buffer area is required.

Advantages:

- One of the most effective tools to protect stream stability, ecosystem and water quality
- Avoids stream impacts to private property due to erosion and flooding
- Provides a clear and consistent guideline for builders and developers, treating all property similarly

St. Louis County Stream Bank



MSD 2005 Infomercial

Disadvantages:

- Reduces useable land
- Requires ongoing enforcement to protect allowed uses

Key Decision Points to Implement:

1) ***Physical delineation requirements –*** The recommended approach is to define streams by solid and dashed blue lines on U.S. Geological Survey maps. Alternative maps from MSD, FEMA, and the city or other agencies may be used. The start of the buffer is recommended to be defined as top of bank, or if none, the water mark of the 10 year 24-hour event or the 15 year 20-minute event. An alternative is to use the centerline of the stream flow, however, many streams in the area have variable widths, and may be wider than the designated buffer width.

2) ***Minimum buffer width –*** Many jurisdictions regionally and nationally have adopted stream buffer widths that are a minimum of 50 feet on major streams, and 25 feet on minor, intermittent streams. For example, St. Charles County Unified Development Ordinance requires a 50 foot set back on both sides of the stream to remain undisturbed, measured horizontally from the top of bank on all proposed development. However, EPA recommends a minimum base width of 100 feet of buffer in natural condition to adequately provide stream protection, based on research, for optimal effectiveness.

3) ***Conditions requiring increased buffer width –*** Some communities have increased the width of the buffer where steep slopes adjacent to the stream are present.

4) ***Buffer zones and allowable uses –*** Multiple zones are optional. A municipality can define two or three zones with various allowed uses. The inner zone closest to the stream should be at least 25 feet and allowable uses are limited to footpaths. Vegetation is natural. If multiple zones are selected, a middle zone should be at least 25 feet, but is typically 50 to 100 feet, and allowable uses are restricted to recreational uses and utilities. An outer zone is at least 25 feet, and uses may include lawn and gardens.

5) ***Defining lot lines and building lines –*** Buffer zones are recommended to be in designated common land under the control of subdivision trustees. The inner buffer zone should be located outside lot and building lines. Some models have permitted lot lines within the middle or outer buffer zones.

Recommended Models:

Passing of a model stream buffer ordinance is necessary to implement this strategy. Various portions of several recommended ordinances have been discussed in this booklet. Ordinances to consider when developing a Stream Buffer ordinance include:

Metropolitan North Georgia Water Planning District. Final Model Storm water Management Ordinances. Model Stream Buffer Protection Ordinance.
http://www.northgeorgiawater.org/

St. Charles County. Unified Development Ordinance, Article VI, Section 405.5021. Regulations for the Protection of Natural Watercourses
http://www.saintcharlescounty.org/Portals/57ad7180-c5e7-49f5-b282-c6475cdb7ee7/udo2005.pdf

The Stormwater Manager's Resource Center. Model Ordinance Stream Buffers.
http://www.stormwatercenter.net/

2 Planned Unit Development (PUD) Performance Criteria

Description of Strategy:

Planned unit developments (PUD) is a tool that is commonly used by most municipalities to allow for design flexibility to capitalize on a site's desirable features plus promoting land use efficiency, and potentially, environmental protection. It imposes specific conditions on the development that are site specific to ensure performance conditions are met to protect water quality. The primary objective of a PUD is to protect natural resources in the community through providing flexibility in the design of residential developments.

Applicability:

A common tool used in municipalities as an alternative to traditional land use. For water quality, emphasis is placed on the performance of a parcel and how it minimizes the development's impact to water quality and the environment.

Wynncrest Subdivision, Wildwood, MO

Advantages:

- Preserves natural resources
- Requires more participative review up front
- Allows for more innovation and creativity
- Allows implementation into existing PUD ordinance and process
- Offers more flexibility to the municipality and developer

Disadvantages:

- Requires more detailed study with associated cost and complexities
- Intended benefits not measured
- Can lead to more legal challenges
- Negative benefit when used on land that is not suitable for building

Key Decision Points to Implement:

1) ***Buffer size –*** Setting a minimum buffer width required in the PUD is one of the performance criteria to consider. (See Strategy 1 – Stream Buffer, Key Decision Points).

2) ***Open space –*** Setting a minimum percentage of the site that will be required to be maintained as open space, based on buildable area. Defining the open space, or portion thereof, that must remain in a natural, undisturbed condition.

3) ***Impervious surface –*** Setting the maximum percentage of impervious surface on the site, for example 25%. This percentage could be lowered for sites with steeper slopes, for example, to 15% if the slope is over 25%.

4) ***Density –*** When developments meet or exceed the buffer, open space, or other performance related criteria, determine the density bonuses that may be allowed. Setbacks may also be relaxed when performance criteria is met.

Recommended Models:

Passing an ordinance is necessary to implement this strategy. Various portions of several recommended ordinances have been discussed in this booklet. Ordinances to consider when developing a PUD ordinance include:

City of Chesterfield, MO, Planned Environment Unit Procedure (PEU). Ordinance #1819.
http://www.chesterfield.mo.us/qfsearch/SearchServlet

City of Wildwood, MO. Planned Residential Development, Ordinance #752. Contact City Hall (636) 458-0440

Metropolitan North Georgia Water Planning District. Final Model Storm water Management Ordinances. Model Ordinance for Post-Development for Storm water Management for New Development and Redevelopment.
http://www.northgeorgiawater.com/

Smart Communities Network. Land Use Codes/Ordinances. Performance Zoning Model Ordinance. Bucks County, Pennsylvania
http://www.smartcommunities.ncat.org/codes/bucks.shtml

3 Overlay Zoning

Description of Strategy:

Overlay zoning is a tool for applying alternative site designs within a defined area. Overlay zoning imposes additional regulations and development criteria within a focused area, typically a specific, mapped district. Overlay districts may include flood plains, wetland areas, specified stream corridors or specific watersheds.

Applicability:

Overlay zones can be applied in any community, depending on what you are trying to protect, i.e., watershed, stream buffers, flood plain zones, or natural resources, etc. Overlay zoning is particularly useful when it is desired to protect a sensitive area of the community, such as a specific stream or resource.

Three Sisters Farm, Wildwood, MO

Advantages:

- Reduces negative impacts
- Enhances the quality of the development
- Flexibility in the application of standards
- Increases compatibility between adjacent uses and developments

Disadvantages:

- Potential conflict with current zoning regulations
- Use of the overlay district identifies a portion of the community for different treatment or regulatory structure
- Concept approval required
- Requires more studying of the area/overlay zone prior to designation of the area as an overlay district

Key Decision Points to Implement:

1) ***Determine overlay district –*** Consider which areas need an overlay zone and why. Identify the various factors such as adjoining land use, water quality, environmentally sensitive areas, and potential threats to an area that will determine the overall reasoning to support the strategy.

2) ***Performance criteria –*** Determine the increased performance criteria required in the overlay zone: preserving wetlands and flood plains, reducing impervious areas beyond the minimum, increasing the size of natural areas, or requiring setbacks along streams or other best management practice designed to mitigate adverse impacts.

3) ***Establish bonuses for performance –*** Determine if any bonuses will be available when the performance criteria is met, for example, reduced setbacks or increased density.

4) ***Conflict resolution guidelines –*** Consider establishing which standard supersedes or governs in case of a conflict between existing zoning regulations and the new overlay zone.

Recommended Models:

Passing an ordinance is necessary to implement this strategy. Various portions of several recommended ordinances have been discussed in this booklet. Ordinances to consider when developing an Overlay Zoning ordinance include:

Atlanta Regional Commission. Model Ordinance Overlay District. http://www.atlantaregional.com/communitybuilding/overlay_districts_model_ordinances.pdf

Blue Springs, Missouri. Municipal Codes. Planned Residential Overlay (PRO) Zoning, Chapter 404 of Title IV. http://www.bluespringsgov.com/Default%20Page%20Links/helpful%20information.htm

Environmental Protection Agency. Model Surface Water Ordinance. http://www.epa.gov/owow/nps/ordinance/mol7.htm#surfacewater

Environmental Protection Agency. Surface Water Ordinances. County of York, Virginia Watershed Management and Protection Area Overlay District. http://www.epa.gov/owow/nps/ordinance/osm7.htm

4 Conservation Subdivision Ordinance

Description of Strategy:

A conservation subdivision protects the vulnerability of environmentally sensitive open space land and concentrates development within a limited space. It promotes the preservation of open space and greenspace for watershed protection and the non-structural management of storm water runoff in residential or mixed-use developments. It allows a developer to maximize his yield while protecting water quality. This strategy is different from a PUD in that it focuses on the design of the subdivision, emphasizes the protection of environmentally sensitive land and maximizes open space while still allowing an average number of homes and lot sizes for the entire project with the open space.

Applicability:

A conservation subdivision design is applicable to new development and redevelopment and is gaining popularity throughout the nation. Its purpose is to protect open space, forest or other natural features, and sets other performance requirements within community developments.

EPA Post-Construction

Advantages:

- Reduces impervious cover and preserves green space
- Reduces pollutant loads to creeks and/or streams from storm water runoff.
- Protects water quality, wildlife habitat, and scenic vistas
- Usually increases home sales prices
- Reduces infrastructure construction costs
- Means for expanding public trails and greenways

Disadvantages:

- May be difficult to enforce (if working with outdated and inflexible zoning and subdivision codes)
- Intended to be used on sensitive land
- Clustering of houses may result in smaller lot size and more land in common ground
- Not appropriate for all locations and all types of residential development

Key Decision Points to Implement:

1) ***Define requirements –*** Determine the open space requirements, such as a minimum of 40% open space required for densities over 0.5 units per acre, as a percent of buildable area or total area. Determine the percentage of open space that is required to be in natural condition, such as 50% designated as undisturbed green space.

2) ***Determine exceptions –*** Define unbuildable areas in the ordinance: wetland areas, flood plain and slopes >25%.

3) ***Existing zoning –*** Determine the amount to relax setbacks and the lot size requirement of existing zoning to meet open space requirements without increasing the average overall density allowed by existing zoning.

4) ***Modifications –*** Modification of comprehensive plans, zoning ordinances, and subdivision codes may be required to incorporate the flexibility needed to implement a conservation subdivision.

5) ***Land management –*** Consider the mechanism used to manage the open space: using conservation easements, or common ground managed by homeowner associations.

Recommended Models:

Passing an ordinance is necessary to implement this strategy. Various portions of several recommended ordinances have been discussed in this booklet. Ordinances to consider when developing a Conservation Subdivision ordinance include:

Atlanta Regional Commission. Conservation Subdivision-Quality Growth Toolkit.
http://www.atlantaregional.com/qualitygrowth/toolkit.html

Environmental Protection Agency. Open Space Development. Model Open Space Ordinance.
http://www.epa.gov/owow/nps/ordinance/openspace.htm

Metropolitan North Georgia Water Planning District, Model Conservation Subdivision/Open Space Development Ordinance, Final Model Storm water Management Ordinance.
http://www.northgeorgiawater.com/ .

Smart Com Network, Green Development Conservation Subdivision Design
http://www.smartcommunities.ncat.org/greendev/subdivision.shtml

5 Infill Redevelopment

Description of Strategy:

Infill redevelopment promotes the development of construction on vacant parcels and reuse of existing developed property in urban areas. The benefit to the environment and water quality from this strategy is that development is directed to areas where development and infrastructure already exists, and not in undeveloped green fields.

Applicability:

The tool can be applied to any under utilized land in cities or urban settings. It channels development back into the existing neighborhoods and commercial areas and leaves open space undeveloped.

EPA Post Construction Development

Advantages:

- Potential for preserving green fields
- Makes for better use of existing infrastructure
- Reduces cost of public services
- Possible density bonuses for park/greenway provisions
- The increase in impervious area is limited or nonexistent
- Expedited review process is possible
- Storm water management strategies can be implemented to reduce runoff from the site

Disadvantages:

- Potentially threatens existing established neighborhoods and land use
- Driving force for redevelopment is economic, not environmental protection
- Regulatory requirements may serve as disincentives
- Densities of development are increased for economic purposes
- Does not improve imperviousness of overdeveloped areas
- Negative environmental impacts on the immediate area are possible when increasing impervious area.

Key Decision Points to Implement:

1) ***Determine target –*** Identify potential areas for redevelopment based on policy criteria established by the community.

2) ***Plan review –*** Review the community's Comprehensive Plan and look for data, policies, and projects that can support the infill redevelopment projects.

3) ***Compatibility –*** Consider the impact of the infill development on the established surrounding community.

4) ***Determine storm water impact –*** Consideration for onsite storm water management is needed, and its impact on adjacent properties. If more impervious surfaces result, neighbors may experience storm water problems where none previously existed.

5) ***Strategies and incentives –*** Infill redevelopment strategies could incorporate density bonuses or other incentives to encourage the developer to deviate from conventional development trends. Other incentives may include: reduced fees, relaxed setbacks, density zoning variances, expedited approvals, loan guarantees, tax credits, and tax increment financing.

Recommended Models:

Passing an ordinance may be necessary to implement this strategy. Various portions of several recommended ordinances have been discussed in this booklet. Ordinances and information to consider when implementing an Infill Redevelopment strategy include:

Atlanta Regional Commission, Local Government. Quality Growth Resources. Sample Ordinance.
https://www.atlantaregional.com/

City of Austin, TX Smart Growth Initiative
http://www.ci.austin.tx.us/smartgrowth/programs.htm

Clark County, Washington, Comprehensive Growth Management Plan
http://www.co.clark.wa.us/longrangeplan/review/index.html

Infill Development Strategies for Shaping Livable Neighborhoods, June 1997 - Report No. 38
http://www.mrsc.org/Publications/textfill.aspx#E19E17

Maryland Department of Planning, Infill and Redevelopment
http://www.mdp.state.md.us/order_publications.htm

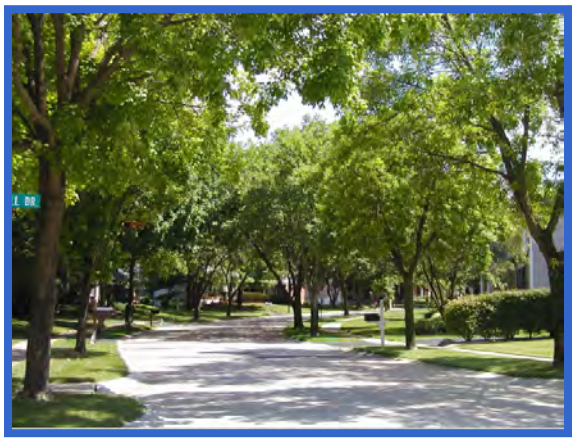
6 Tree Preservation

Description of Strategy:

A tree preservation ordinance is a tool used for the preservation, and planting of trees in a watershed. It provides for the protection of the aesthetic, economic and environmental benefits of trees. For water quality protection, the environmental benefits of trees include (1) reducing runoff through increased surface area and by allowing rain to seep naturally into the ground, (2) preventing soil erosion by holding soil in place, and (3) providing shade which helps to cool water temperature.

Applicability:

This tool can be applied in any community to provide for the protection, management, removal and replacement of trees on private property, public property and public right-of-way. Tree preservation not only benefits the environment through improved water quality, but also improved air quality and lower energy use.



City of Chesterfield Tree Manual

Advantages:

- Helps to reduce air and noise pollution
- Reduces storm water runoff and improves water quality
- Provides energy-saving shade and cooling
- Enhances natural scenery and increases property value

Disadvantages:

- Perceived costs to developer to identify and preserve trees
- Planting a new tree is less beneficial to capturing storm water runoff than preserving a mature tree
- Preservation standards can be too prescriptive and inflexible
- Incentives may not be offered to developers

Key Decision Points to Implement:

1) ***Ordinance goal –*** Municipalities should clearly state what they want the ordinance to accomplish. Consider the community's priorities with a clearly stated purpose that provides the reason for the existence of the ordinance.

2) ***Catalog –*** Inventory current trees and species. Communities should conduct their own inventories of trees, assessing species, the health of the trees and information about where the trees are in relationship to other natural resources i.e., watersheds. Second, where the ordinance protects trees on private property, an on-site tree inventory may be required by developers.

3) ***Performance standard –*** The ordinance should indicate which practices and conditions are acceptable and which are not. Basic performance standards to which the municipality intends to hold developers and property owners should be included.

4) ***Enforcement and penalties –*** Designate a position or positions responsible for enforcement to ensure the community's compliance with the ordinance. To deter offenders, the ordinance must contain some provisions for penalizing violators.

5) ***Protection –*** Consider preservation or accounting for mature versus young trees. Identify the characteristics of trees the community wants to protect. Factors to consider include age, size for different species, location, protection for aesthetically pleasing trees, and general condition.

6) ***Preservation fund –*** Consider setting up a tree preservation fund and apply consistent criteria. Establish an account where funds are held separately from the city's general fund. Money is collected as a result of fines or payments under the enforcement provision of the ordinance to be used strictly for tree plantings on public property.

7) ***Incentives –*** Consider incentives for developers to retain existing trees. Some common incentives include: community grant fund for replacing or planting new trees, offering developers zoning incentives and property tax breaks to landowners.

Recommended Models:

Passing an ordinance is necessary to implement this strategy. Various portions of several recommended ordinances have been discussed in this booklet. Ordinances to consider when developing a Tree Preservation ordinance include:

City of Chesterfield Tree Manual
http://www.chesterfield.mo.us/documentcenter/planning/treemanual.pdf

City of Wildwood, Chapter 410 Tree Preservation and Restoration Req.
http://www.ctspublish.com/wildwoodlp/lpext.dll?f=templates&fn=frame_default.htm

Georgia Forest Commission, The Framework of Community Tree Ordinances
http://www.gfc.state.ga.us/Resources/Publications/CommunityForests/FrameworkofOrdinances2004.pdf

Georgia Forest Commission, Tree Ordinance Development Guidebook
http://www.gfc.state.ga.us/Resources/Publications/CommunityForests/TreeOrdinanceDevelopmenGuidebook.pdf

Guidelines for Developing and Evaluating Tree Ordinances
http://phytosphere.com/treeord/index.htm

International Society of Arboriculture, Tree Ordinance Guidelines
http://www.isa-arbor.com/publications/ordinance.aspx

National Arbor Day Foundation, Tree City USA
http://www.arborday.org/programs/treeCityUSA.cfm

National Association of Home Builders, Tree Preservation Ordinances
http://www.nahb.org/generic.aspx?sectionID=630&genericContentID=19086&print=true

St. Charles County Unified Development Ordinance, Section 410.145 Tree Preservation Program
http://www.saintcharlescounty.org/Portals/57ad7180-c5e7-49f5-b282-c6475cdb7ee7/udo2005.pdf

Scenic America, Landscape Model Ordinance
http://www.scenic.org/Default.aspx?tabid=204

7 Flood Plain Protection

Description of Strategy:

Flood plain protection provides for the designation of flood-prone areas and management of land use in those areas. It regulates the use of flood hazard areas and minimizes modifications to streams, reducing flood hazards and protecting the environmentally beneficial functions. Although enforcement is a local responsibility, there are state and federal standards that are required if participating in the National Flood Insurance Program.

Applicability:

This tool applies to all areas with a flood plain or subject to flood prone hazards as defined within a community. Flood plain areas can serve to provide storm water management, water quality, stream bank protection, stream corridor protection, wetland preservation and ecological purposes when restricted to maintain undisturbed land use or minimally disturbed areas.

FEMA: 1993 Missouri Flood

Advantages:

- Reduces future flooding impacts
- Preserves greenspace, habitat and ecology
- Protects water quality
- Protects the function of flood plains to safely convey flood waters
- Reduces expenses related to rebuilding and/or rescue operations

Disadvantages:

- Limits development in specific areas
- Increased costs to develop in the flood plain
- May require future land use conditions to be established for flood plains

Key Decision Points to Implement:

1) ***Flood plain boundaries –*** Determine the limits of the floodway by utilizing the Flood Insurance Study (FIS) or Federal Emergency Management Agency (FEMA) approved flood study as tools.

2) ***Approval criteria –*** Require a flood plain study and establish the criteria for approving development on parcels of ground in the flood plain. Define the limitations in which development will be permitted, and any conditions imposed on the development in order to protect the flood plain and reduce flood damage such as required freeboard for roads and structures. Consider conditions such as no net loss of flood water storage in the flood plain.

3) ***Future conditions –*** The future conditions of the flood plain is based on the projected land use plan for the entire watershed and the flooding that could result in raising the base flood elevations and loss of flood storage capacity. Determine whether development shall be allowed in the watershed within the future conditions flood plain.

4) ***Compatibility with other regulations –*** The requirements of the ordinance should be compatible with existing laws/regulations. Determine which regulation supersedes the other, is more restrictive, or imposes higher standards in order to protect public health and the environment.

5) ***Variances –*** Establish who will hear and decide the request for appeals. Determine under what conditions variances may be issued.

Recommended Models:

Passing an ordinance is necessary to implement this strategy. Various portions of the recommended ordinances have been discussed in this booklet. Ordinances to consider when developing a Flood Plain Protection ordinance include:

Metropolitan North Georgia Water Planning District, Model Flood plain Management/Flood Damage Prevention Ordinances
http://www.northgeorgiawater.com

State of Missouri, State Emergency Management Agency, Final Model Storm water Management Ordinances
http://sema.dps.mo.gov/NFIP%20Page

8 Conservation Easement

Description of Strategy:

A conservation easement restricts the amount of development on private property to protect the natural resources associated with the land. The easement is a voluntary land-protection tool that is privately or publicly initiated to conserve natural resources on the property i.e., open space.

Applicability:

Typically done to preserve agriculture lands and natural areas that are facing development pressure on the suburban-rural fringe. Conservation easements can be limited in urban areas, due to both the lack of available open space for purchase and the high cost of undeveloped land. They are used in all parts of the country, and many private groups exist to preserve natural lands and manage conservation easements.

SW Managers Resource Center

Advantages:

- Can protect natural resources
- Assumed to contribute water quality benefits
- Possible tax benefits to owner
- Can cover all or a portion of a property
- Easements can relieve landowners from the responsibility of maintenance and monitoring of a property

Disadvantages:

- Easement can be permanent or for a specified time
- Often not an option in more urbanized area
- Initial surveying and planning costs
- Sponsoring organization is needed to hold the property and manage the easement
- May not directly protect water quality in all locations and situations

Conservation Easement

Key Decision Points to Implement:

1) ***Ownership -*** Determine or find an appropriate holder of the easement, whether by government or a private land trust.

2) ***Selection criteria -*** Consider criteria to evaluate appropriateness of managing and holding property in a conservation easement: natural resource value, unique characteristics, minimum size, etc.

3) ***Ongoing management -*** Responsibility for the monitoring and maintenance of the easement must be assigned and the financial resources provided.

4) ***Enforcement -*** Provisions must be made for enforcing the restrictions of the easement.

Recommended Models:

Executing and recording easements will be necessary to implement this strategy. Various portions of recommended easements have been discussed in this booklet. Ordinances and information to consider when developing Conservation Easements includes:

EPA, Post-Construction Storm Water Management in New Development & Redevelopment
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_10.cfm

Land Trust
http://landtrust.org/ProtectingLand/EasementInfo.htm

Michigan Model Conservation Easement,
http://landtrust.org/ProtectingLand/MichModelEasementTextVersion.htm

The Nature Conservancy. How we work. Conservation methods.
http://www.nature.org/aboutus/howwework/conservationmethods/

Supplemental Resources

Congress for New Urbanism. Model Codes.
http://www.cnu.org/pdf/code_catalog_8-1-01.pdf

Center for Watershed Protection. Codes and Ordinances Worksheet.
http://www.cwp.org/COW_worksheet.htm

East-West Gateway Council of Governments. Water Resources Council Toolbox. Model Ordinances.
http://www.ewgateway.org/environment/waterresources/ToolBox/TB-ModelOrds/tb-modelords.htm

Environmental Protection Agency (EPA), Post-Construction Storm Water Management in Development and Redevelopment (Ordinances for Post-construction Runoff)
http://cfpub.epa.gov/npdes/storm water/menuofbmps/post_22.cfm

Metropolitan St. Louis Sewer District. Phase II Storm Water Management Program.
http://www.stlmsd.com/EnvComply/stormwaterphaseii/index.2.htm

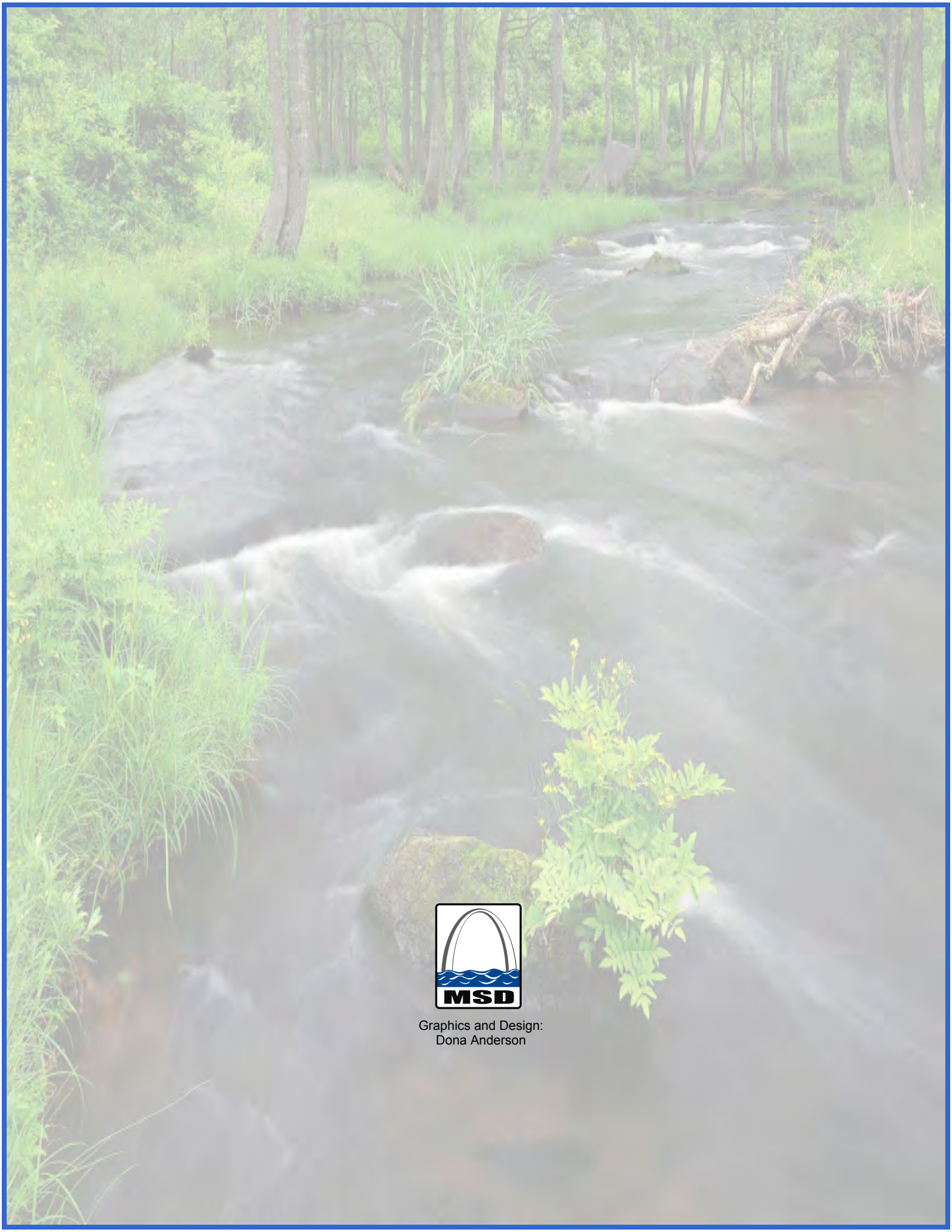
Municipal Research and Service Center of Washington.
http://www.mrsc.org/

Recommended Model Development Principles for Frederick County, MD.
http://www.cwp.org/Frederick.pdf

Putting Conservation into Local Codes & Ordinances.
http://www.publish.csiro.au/nid/20/pid/4329.htm

Smart Growth Online, Land Development Regulations Publications.
http://www.smartgrowth.org/library/byldrtype.asp?typ=12

Watershed Zoning Builder Credits.
http://www.stormwatercenter.net/Manual_Builder/Credits/WATERSHED/watershed%20zoning.htm



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