

## **Chapter 8: Additional Requirements for Land Development Located in the Watershed of a Public Water Supply**

### **Section 8.1 Applicability**

The provisions of this Chapter shall apply to land development located within the watershed of a designated public water supply reservoir(s), in addition to all other applicable provisions of this Ordinance. The County will, by Ordinance, identify the public water supply reservoir(s) in Pulaski County to which Chapter 8 applies.

### **Section 8.2 Wastewater Discharge**

- A. No Preliminary Plat or Site Plan shall be approved without a Wastewater Management Plan which includes:
1. Design plans for either a Force Line System or an On Site System for management of wastewater that are certified by a registered professional engineer and approved by the Engineering Section of the Arkansas Department of Health, and in the event an RME has been designated, approved by the RME;
  2. A Wastewater System Maintenance Plan that is certified by a registered professional engineer, and in the event an RME has been designated, approved by the RME; Force Line Systems are the preferred method for managing wastewater. On Site Systems may also be used. Surface discharges of wastewater, with the exception of discharges permitted under the National Pollutant Discharge Elimination System (NPDES) storm water discharge program, are prohibited.
- B. Force Line Systems and On Site Systems shall be designed and constructed to meet the applicable requirements of the Rules and Regulations Pertaining to Wastewater Systems, Arkansas Department of Health and the applicable regulations of the Arkansas Commission on Pollution Control and Ecology.
- C. If the wastewater system is not constructed by the RME, the Bill of Assurance shall include appropriate provisions to dedicate the wastewater system to the RME and/or to assign the right to implement the Wastewater Maintenance Plan to the RME, such that if an RME is designated to assume responsibility for wastewater system operation and/or maintenance, the RME may do so and charge the Developer or POA or lot Owner a reasonable fee.

### **Section 8.3 Stormwater Management**

No Preliminary Plat or Site Plan shall be approved without a Stormwater Management Plan which demonstrates that the Surface Runoff Loading Rates from the Development will achieve the values specified in Table 1, below.

Table 1. Applicable Surface Runoff Loading Rates from New Developments

Total Phosphorus (pounds/acre/year)	Total Sediment (tons/acre/year)	Total Organic Carbon (pounds/acre/year)
0.30	0.110	44

Developments that are designed to achieve these Surface Runoff Loading Rates, according to the Surface Runoff Loading Rate Plan certified by a registered professional engineer, shall be deemed to comply with this section.

Section 8.4 Performance Standard Approach for Achieving Surface Runoff Loading Rates

The Performance Standards Approach manages stormwater runoff from new Development by allowing engineered storm water Best Management Practices (hereinafter “BMPs”) to meet the Surface Runoff Loading Rates.

- A. Structural BMPs and Compensatory Environmental Projects may be utilized as an alternative to or in combination with the Conservation Design Approach to achieve the applicable Surface Runoff Loading Rates. BMP design criteria and surface runoff loading rates that can be expected to be achieved for specific BMPs will be specified in the Stormwater Management and Drainage Manual to be adopted by the Pulaski County Quorum Court by separate ordinance. The Surface Runoff Loading Rate Plan must include documentation, and a certification from a registered professional engineer, that the proposed BMPs will achieve the applicable Surface Runoff Loading Rates, when constructed in accordance with the Stormwater Management and Drainage Manual.
- B. To the extent that the Stormwater Management and Drainage Manual does not address the design and/or expected loading rate for the particular BMP or series of BMPs that are proposed, the Surface Runoff Loading Rate Plan must document that the proposed BMPs, when used in other watersheds, have demonstrated the ability to achieve the applicable Surface Runoff Loading Rates. Online documents such as the Handbook for New Development or Redevelopment at the California Stormwater Quality Association (CASQA) website or relevant portions of the City of Knoxville’s Best Management Practices (BMP) Manual – October 2007 may be used as an interim guideline design document until a watershed specific manual can be developed. Expected loading rates shall be based on performance analysis results from the International Stormwater BMP Database using case study BMP influent and effluent concentration values that are representative of the influent runoff concentrations expected for the proposed development.
- C. When the Performance Standard Approach is proposed, a copy of the Surface Runoff Loading Rate Plan and the BMP Maintenance Plan must be submitted with the Preliminary Plat application. Preliminary Plat applications utilizing the Performance Standard Approach shall be submitted to the Pulaski County Planning and Development

Department no later than sixty (60) days prior to the meeting at which they will be heard by the Board.

- D. At the request of the County, the Developer will be required to demonstrate the performance capability of any particular BMP or BMP based design through a monitoring plan implemented as part of the first phase of a development. The monitoring plan must be designed by the Developer such that the results are reasonably representative of BMP performance, and the monitoring is performed for a period of time sufficient to capture representative storm events. Monitoring shall continue for a minimum of (3) years unless the County has agreed that a shorter period of time is adequate for the proposed development and proposed BMPs. The design of the monitoring plan and the cost of the monitoring plan shall be shared by the County and the Developer. In the event the County and the Developer are not able to agree on the terms of a monitoring plan, the Planning and Development Department shall retain an independent registered professional engineer to prepare and implement a monitoring plan, and the cost shall be shared equally between the County and the Developer.
- E. If monitoring is required and initial development phase monitoring results show that applicable Surface Runoff Loading Rates are not being met, the Developer shall be required to mitigate the excess loading by implementation of one or more of the following measures:
1. Rehabilitation or maintenance of the BMP or installation of additional BMPs and/or additional monitoring to demonstrate compliance with the Surface Runoff Loading Rates.
  2. Dedication of sufficient mitigation lands within the Development or in another area of the watershed as Undisturbed Area to mitigate the excess loading. The Pulaski County Planning Board may require, as a condition of plat approval, that the Developer identify and preserve reasonably sufficient lands owned by the Developer within the same watershed as the Development to enable the Board to designate such lands for mitigation should that become necessary.
  3. Completion of a Compensatory Environmental Project on another property in the same watershed as the Development to mitigate the excess loading.
- F. If monitoring is required by the County in accordance with this Section 8.4, the County may also require the Developer to post such bond, letter of credit, cash deposit, escrow or other security as the County deems appropriate to assure the Developer can meet all of its obligations under this Section 8.4, including specifically but not limited to Section 8.4E. In the event the County requires such surety, in any form, the surety shall satisfy all of the requirements of Section 3.10 except as varied by the Pulaski County Planning Board to meet the unique requirements of this Section 8.4. Section 3.10B.2 shall be inapplicable to any surety posted pursuant to this Section, and such surety if required, shall be maintained for a minimum period of three (3) years following commencement of the monitoring plan implemented pursuant to this Section 8.4.

- G. The Bill of Assurance shall include an appropriate assignment of the right to implement the BMP O&M Plan to the County, to assure that if the BMP O&M Plan is not properly implemented, the County, or its authorized representative, may do so and the County, or its authorized representative, may obtain reimbursement for all costs incurred from the responsible party (i.e. the Developer, the POA or the lot Owner, or other party designated in the Bill of Assurance.)

Section 8.5 Conservation Design Approach for Achieving Surface Runoff Loading Rates

- A. The Conservation Design Approach manages stormwater runoff from new development by designing the Development in such a manner that the Surface Runoff Loading Rates will be achieved. The professional engineer’s certification that the proposed Development design will achieve the Surface Runoff Loading Rates must be consistent with the Surface Runoff Loading Rates derived from the Site Evaluation Tool, after the Site Evaluation Tool is adopted by Pulaski County by Ordinance.
- B. Until such time as the Site Evaluation Tool is adopted by Pulaski County by Ordinance, the professional engineer’s certification that the proposed development design will achieve the Surface Runoff Loading Rates may be based on a design that meets the criteria outlined in the following Table 2 and Table 3:

Table 2. New Residential Subdivision Development

Parcel Slopes	Parking and Driveway Surfaces	Undisturbed Area (Minimum)	Impervious Surfaces (Maximum)
All	Paved	30%	10%

Table 3. Commercial and Non Residential Subdivision Development

Parcel Slope	Parking and Driveway Surfaces	Undisturbed Area to Impervious Area Ratio
Low	Paved	7.9:1
High	Paved	9.7:1

- C. Low Slope and High Slope areas and Undisturbed Areas shall be identified as such on the plat or Site Plan. The plat or Site Plan and the Bill of Assurance shall include notations on each lot which identify the restriction on driveway and parking surfaces, the limitation on the undisturbed area, and the limitation on impervious areas that will apply during build out and occupation of the lot. The Bill of Assurance shall include an appropriate assignment of the right to enforce the restrictions on driveway and parking surfaces, and limitations on undisturbed area and impervious areas contained therein to the County, or

its authorized representative, and the County, or its authorized representative, must take action pursuant to this paragraph, the County or its authorized representative may obtain reimbursement for all costs incurred from the responsible party (i.e. the Developer, the POA or the lot Owner, or other party designated in the Bill of Assurance).

- D. A site design may provide for an increase in the amount of impervious area on the site by collecting, capturing and managing the runoff on site. The increase in the amount of impervious area shall be proportional to the amount of runoff that is managed such that it does not become runoff to the watershed of a designated public water supply reservoir. For purposes of calculating the percentage of impervious surface in Table 2 and the ratios in Table 3, the portion or proportion of impervious areas for which surface water is captured and managed on site shall not be included.

#### Section 8.6 Stormwater Management and Drainage Manual

- A. The Pulaski County Planning Board shall, within three (3) months of the adoption of this code, engage the services of a professional consultant to develop a Stormwater Management and Drainage Manual which includes a Site Evaluation Tool.
- B. The Pulaski County Quorum Court shall, within twelve (12) months of the adoption of this code, adopt by separate ordinance, a Stormwater Management and Drainage Manual which includes a Site Evaluation Tool.

#### Section 8.7 Additional Plat and Site Plan Application Requirements

- A. The following documents shall be submitted with the Preliminary Plat or Site Plan:
  - 1. A copy of the National Pollutant Discharge Elimination System (NPDES) storm water discharge program permit for construction activity, and a copy of the Construction Activity Pollution Prevention Plan prepared pursuant to that permit.
  - 2. Wastewater Management Plan.
  - 3. A Stormwater Management Plan, which includes:
    - i. Surface Runoff Loading Rate Plan;
    - ii. An Undisturbed Area Vegetation Management Plan;
    - iii. If BMPs are proposed, a BMP O&M Plan.
- B. The Bill of Assurance shall include terms which provide for the provision of and responsibility for following:

1. Operation and maintenance of the wastewater treatment system, if the system or any part thereof is to be operated or maintained by the Developer, the POA or the lot Owner.
2. Management of stormwater during construction in accordance with a Construction Activity Pollution Prevention Plan that complies with this Ordinance.
3. Maintenance of the applicable impervious limitations, undisturbed area limitations or other limitations specified on the plat for achieving the applicable Surface Runoff Loading Rates.
4. Maintenance of the Undisturbed Area in accordance with a plan that complies with this Ordinance.
5. Maintenance of BMPs in accordance with a plan that complies with this Ordinance.
6. At least once per year during build out of the development, and each five (5) years thereafter, the Wastewater Management Plan, the Construction Activity Pollution Prevention Plan, and the Undisturbed Area Vegetation Management Plan will be reviewed, updated as necessary, and certified by a registered professional engineer, to assure that those systems continue to achieve the desired functions. If the Performance Standard Approach is utilized, the BMP O&M Plan will also be reviewed, updated as necessary, and certified by a registered professional engineer, to assure that the BMPs are operating in a manner to achieve the Surface Runoff Loading Rates. If a variance has been granted for soil disturbance on very high slopes, the BMP O&M Plan will also be reviewed, updated as necessary, and certified by a registered professional engineer, to assure that any very high slope BMPs that are retained after construction are operating in a manner to achieve their desired functions. Said certified results shall be submitted to the Pulaski County Planning and Development Department.
7. An initial term of not less than fifty (50) years and it shall automatically renew in successive ten (10) year periods unless such Bill of Assurance is terminated in accordance with its terms; provided, however, it being agreed that no Bill of Assurance governed by this Chapter 8 of the code shall terminate without the consent of the Pulaski County Planning Board.

**Section 8.8 Stormwater Management During Construction**

In addition to the requirements of the NPDES stormwater construction permit, the Construction Activity Pollution Prevention Plan shall include the following sediment and erosion control measures:

- A. Limiting land disturbing activity on the site to the extent practical and consistent with the development activities planned;
- B. Re-vegetating of areas disturbed by grading;
- C. Retaining all sediment within the boundaries of the tract to the extent practical;
- D. Re-establishing ground cover to restrain erosion following the construction or development phase;
- E. Establishing stream side buffers and/or or enhanced management controls within streamside buffer areas;
- F. Avoiding the channeling of runoff directly into a water body through the use of swales or other systems to decrease the velocity of stormwater, increase infiltration, allow solids to settle and remove pollutants;
- G. Limiting alteration of natural watercourses such as straightening, widening, or dredging;
- H. Periodic inspections and continued maintenance.

#### Section 8.9 Undisturbed Area

- A. Undisturbed Areas must be maintained in a vegetated condition in accordance with an Undisturbed Area Vegetation Management Plan.
- B. An area proposed as Undisturbed Area that was disturbed prior to development or that will be disturbed for purposed of installing approved BMPs, wastewater lines and facilities, utilities, or similar engineered items, may be designated as Undisturbed Area provided it is re-vegetated in accordance with the Undisturbed Area Vegetation Management Plan.
- C. The purpose of the Undisturbed Area Vegetation Management Plan is to provide reasonable measures to preserve the water quality functions of the natural area. The following management activities are allowed in areas designated as Undisturbed Area:
  - 1. Thinning and brush removal using equipment that does not compact the soil or damage tree roots. For example, bulldozers should not be used, but handheld equipment and small tractors equipped with a bush hog are appropriate;
  - 2. Fire management activities such as fire lines, thinning, an prescribed burning conducted by forestry professional according to Arkansas Forestry Commission guidelines are appropriate;

3. Establishment of native understory grasses and other herbaceous species are appropriate;
4. Planting of annual rye grass where bare soil is exposed is appropriate, so long as it is a component of a permanent restoration plan that includes native vegetation.
5. Installation of drip lines for wastewater treated effluent discharge using equipment that does not compact the soil or damage tree roots. For example, bulldozers should not be used but handheld equipment and small tractors equipped with a bush hog are appropriate;
6. Uses of Undisturbed Area that are consistent with maintaining the water quality functions of the area, such as hiking or walking trails, fishing, birding, hunting (as posted), and education are allowed.

Section 8.10      Very High Slopes

- A. Roads, utilities and other development infrastructure should not be constructed on Very High Slopes, except when necessary, such as when a crossing of Very High Slope land is required.
- B. Except as required under subsection A. above, development is prohibited on slopes with a slope gradient of twenty-five (25) percent or more, provided that a variance may be granted by Pulaski County Planning Board if the following conditions are met:
  1. The soil disturbance in areas with slopes equal to or greater than 25 percent (25 %) shall not exceed fifteen percent (15%) of area of the development equal to or greater than 25 percent (25 %) slope.
  2. A slope stability analysis by a registered professional engineer is completed for the proposed development features located on very steep slopes, and the analysis demonstrates that the proposed development activities are compatible with the slope stability.
  3. The soil disturbance shall be conducted in a manner that minimizes loss of existing vegetation.
  4. The angle for graded slopes and fills shall be no greater than the angle which can be retained by vegetative cover or other erosion control devices or structures.

5. A Very High Slope BMP Plan shall be prepared and included as part of the Construction Activity Pollution Prevention Plan. The Very High Slope BMP Plan shall contain appropriate sedimentation and erosion control measures designed for the particular slope and soils at the site, and must demonstrate that sediment will be appropriately collected and retained on site through the use of redundant and conservatively designed and well maintained controls.

1 Author: Pulaski County Attorney's Office

Item Number: 09-I-32

2 Sponsored by: Honorables Phil Stowers,

Ordinance Number: 09-OR-25

3 Steve Goss, Charles Roberson, Bob Johnson, Jeff Rollins, Wilandra Dean,

4 Mary Louise Williams, Donna Massey, Dawne Vandiver and Kathy Lewison

5 **AN EMERGENCY ORDINANCE**

6  
7 BE IT ENACTED BY THE QUORUM COURT OF PULASKI COUNTY, ARKANSAS,  
8 AN ORDINANCE TO BE ENTITLED:

9  
10 **AN ORDINANCE ENACTING THE MASTER ROAD PLAN OF PULASKI**  
11 **COUNTY, ARKANSAS, DECLARING AN EMERGENCY, AND FOR OTHER**  
12 **PURPOSES.**

13  
14 WHEREAS, proper planning is vital to the health, safety, and welfare of the residents  
15 of Pulaski County, Arkansas; and,

16  
17 WHEREAS, the Pulaski County Quorum Court is entrusted with ensuring the  
18 harmonious development of the unincorporated area of Pulaski County, Arkansas and  
19 with preserving and protecting the present and future health, safety, order,  
20 convenience, prosperity and general welfare of the citizens of Pulaski County; and,

21  
22 WHEREAS, Pulaski County is committed to planned and intelligent growth which  
23 respects the rights of residential and commercial interests and preserves the County's  
24 precious natural resources; and,

25  
26 WHEREAS, Pulaski County has not amended its Subdivision Rules and Regulations  
27 since 1972; and,

28  
29 WHEREAS, said Subdivision Rules and Regulations are in need of substantial  
30 updating in order to reflect changes in the County and its population; and,

31  
32 WHEREAS, the Pulaski County Planning Board (hereinafter "Planning Board") has  
33 recommended to the Quorum Court the adoption of new Subdivision Rules and  
34 Regulations and a Master Road Plan under the provisions of Ark. Code Ann. §14-17-  
35 201 et seq.; and,

36  
37 WHEREAS, the adoption of a county subdivision ordinance shall be preceded by the  
38 adoption of an official road plan for the unincorporated areas of the county (see, Ark.  
39 Code Ann. §14-17-208(h).

40  
41  
42 NOW, THEREFORE, BE IT ORDAINED by the Quorum Court of Pulaski County,  
43 Arkansas:

44  
45 Article 1. The Master Road Plan and maps, which is attached to this  
46 Ordinance and incorporated herein, is hereby adopted by the

FILED 09/30/09 16:06:26

Pat O'Brien

Pulaski Circuit/County Clerk

Pulaski County Quorum Court as the official road plan for Pulaski County, Arkansas. A copy of the complete Master Road Plan of Pulaski County, Arkansas is available for public inspection at the Pulaski County Planning and Development Office during normal office hours.

Article 2. EMERGENCY CLAUSE: This ordinance, being necessary for the preservation of the public peace, health, and safety, shall be in full effect upon its adoption and signing.

Article 3. SEVERABILITY: If any part of this Ordinance is held invalid, such invalidity shall not affect any other portion of this Ordinance.

Article 4. REPEALER: All laws and parts of laws in conflict with this Ordinance are hereby repealed.

ATTEST: *Keith R. [Signature]*

APPROVED: *Lloyd H. Williams [Signature]*

DATE: 4-30-09

DATE: 4/30/09 04/30/09 16:06:36  
Pat O'Brien  
Pulaski Circuit/County Clerk

1 Author: Pulaski County Attorney's Office

Item Number: 09-I-35

2 Sponsored by: Honorables Phil Stowers,

Ordinance Number: 09-OR-28

3 Steve Goss, Charles Robeson, Bob Johnson, Jeff Rollins, Wilandra Dean,  
4 Mary Louise Williams, Donna Massey, Dawne Vandiver and Kathy Lewison

5 **AN EMERGENCY ORDINANCE**

6  
7 BE IT ENACTED BY THE QUORUM COURT OF PULASKI COUNTY, ARKANSAS,  
8 AN ORDINANCE TO BE ENTITLED:

9  
10 **AN ORDINANCE ENACTING THE SUBDIVISION AND DEVELOPMENT**  
11 **CODE OF PULASKI COUNTY, ARKANSAS, DECLARING AN EMERGENCY,**  
12 **AND FOR OTHER PURPOSES.**

13  
14 WHEREAS, proper planning is vital to the health, safety, and welfare of the residents  
15 of Pulaski County, Arkansas; and,

16  
17 WHEREAS, the Pulaski County Quorum Court is entrusted with ensuring the  
18 harmonious development of the unincorporated area of Pulaski County, Arkansas and  
19 with preserving and protecting the present and future health, safety, order,  
20 convenience, prosperity and general welfare of the citizens of Pulaski County; and,

21  
22 WHEREAS, Pulaski County is committed to planned and intelligent growth which  
23 respects the rights of residential and commercial interests and preserves the County's  
24 precious natural resources; and,

25  
26 WHEREAS, Pulaski County has not amended its Subdivision Rules and Regulations  
27 since 1972; and,

28  
29 WHEREAS, said Subdivision Rules and Regulations are in need of substantial  
30 updating in order to reflect changes in the County and its population; and,

31  
32 WHEREAS, the Pulaski County Planning Board (hereinafter "Planning Board") has  
33 recommended to the Quorum Court the adoption of new Subdivision Rules and  
34 Regulations under the provisions of Ark. Code Ann. §14-17-201 et seq.

35  
36 NOW, THEREFORE, BE IT ORDAINED by the Quorum Court of Pulaski County,  
37 Arkansas:

38  
39 Article 1. The Subdivision and Development Code of Pulaski County,  
40 Arkansas, which is attached to this Ordinance and incorporated  
41 herein, is hereby adopted by the Pulaski County Quorum Court  
42 as the official subdivision rules and regulations for Pulaski  
43 County, Arkansas. A copy of the complete Subdivision and  
44 Development Code of Pulaski County, Arkansas is available for  
45 public inspection at the Pulaski County Planning and  
46 Development Office during normal office hours.

FILE/30 04/30/09 16:10:30  
Pat O'Brien  
Pulaski County Clerk

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Article 2. EMERGENCY CLAUSE: This ordinance, being necessary for the preservation of the public peace, health, and safety, shall be in full effect upon its adoption and signing.

Article 3. SEVERABILITY: If any part of this Ordinance is held invalid, such invalidity shall not affect any other portion of this Ordinance.

Article 4. REPEALER: All laws and parts of laws in conflict with this Ordinance are hereby repealed.

ATTEST: *Scott Lane*

APPROVED: *Lloyd H. O'Brien* *AO*

DATE: *4-30-09*

DATE: *4/30/09*