

# MONROE COUNTY ORDINANCE REVIEW COMMITTEE



**February 13, 2023  
4:00 pm**

**Hybrid Meeting  
In-person**

Monroe County Government Center  
Planning Department  
501 N. Morton Street, Suite 224  
Bloomington, IN 47404

**Virtual:** <https://monroecounty-in.zoom.us/j/84961227024?pwd=ZUISOUQweHVT0HVLNnVUaHdxVERjUT09>. If calling in, dial 312-626-6799 and enter the Meeting ID: 849 6122 7024 and Password: 346950 when prompted.

**A G E N D A**  
**ORDINANCE REVIEW COMMITTEE**  
**of the Monroe County Plan Commission**

Monroe County Planning Department  
HYBRID

**When:** February 13, 2023 at 4:00 PM

**Where:** 501 N Morton St, Suite 224

Or via Zoom: <https://monroecounty-in.zoom.us/j/84961227024?pwd=ZUISOUQweHVTOHVVLNmVUaHdxVERjUT09>

If calling into the Zoom meeting, dial: 312-626-6799.

When prompted, enter the Meeting ID #: 849 6122 7024

Password: 346950

**ADMINISTRATIVE BUSINESS: NONE.**

**OLD BUSINESS: NONE.**

**NEW BUSINESS:**

**TOPICS FOR DISCUSSION:**

1. CDO Module 2 –
  - a. Review of Chapter 825 PAGE 3
  - b. Review of Chapter 829 PAGE 11
  
2. Any other business properly brought before the committee

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a program, service, or activity of Monroe County, should contact Monroe County Title VI Coordinator Angie Purdie, (812)-349-2553, [apurdie@co.monroe.in.us](mailto:apurdie@co.monroe.in.us), as soon as possible but no later than forty-eight (48) hours before the scheduled event.

Individuals requiring special language services should, if possible, contact the Monroe County Government Title VI Coordinator at least seventy-two (72) hours prior to the date on which the services will be needed.

The meeting will be open to the public.

## CHAPTER 825

### ZONING ORDINANCE: ENVIRONMENTAL CONSTRAINTS OVERLAY ZONE

#### 825-1. Purpose

The purpose of the Environmental Constraints Overlay Zone is to:

- (A) Protect and enhance the public health, safety and welfare by
  - (1) Preserving and enhancing the quality of the water supply for residential, industrial and public use;
  - (2) Recommending appropriate regulations for building sites, structures and land uses in the Monroe and Griffey Reservoir watersheds;
  - (3) Improving stormwater management in the watersheds;
  - (4) Preventing pollution, erosion, siltation and the loss of topsoil;
  - (5) Protecting the tax base from impairment due to unwise use of land; and
  - (6) Encouraging watershed mitigation areas.
- (B) Protect and enhance resources as recreational and tourist attractions by
  - (1) Protecting water quality for fish and other aquatic life;
  - (2) Preserving shore cover and the natural beauty of the lakes and streams; and
  - (3) Enhancing and protecting forests, wildlife areas, wetlands, parks and recreational facilities for beneficial water management.

#### 825-2. Development Standards and Administration of the ECO Zone

- (A) Erosion and Drainage Control: in addition to the provisions in Chapter 816 of this Zoning Ordinance and any applicable State and Federal regulations, the following conditions shall apply to development in the ECO Zone:
  - (1) Site plans, subdivision plats, planned unit developments and plans for more than one single family dwelling unit shall be designed by a Professional Engineer registered in the State of Indiana.
  - (2) Construction projects shall minimize disturbance of tree concentrations to the maximum extent reasonable.
  - (3) Streets, parking areas and building pads shall be designed so as to conform closely to existing contours and minimize grading.

- (4) All development proposals and permit applications shall require an erosion and drainage control plan. The plan shall include measures to minimize erosion during and after construction and shall include measures to intercept any erosion before it leaves a site. Runoff mitigation measures shall include a redundancy against failure during any construction or development activity.
- (5) All development proposals requiring phasing of the project due to size or other considerations shall also incorporate a binding, recordable commitment or deed restriction for the ongoing maintenance of any stormwater management facilities located on the development site. Such commitment must also include:
- (a) Periodic third party inspection and report;
  - (b) Incorporated Owners Association with financing capability or provisions in the owner's deeds providing for periodic assessments to cover expected stormwater maintenance expenditures;
  - (c) County authorization to perform necessary maintenance and charge the owners or Owners Association for the work if the owner or Owners Association fails to maintain the stormwater facilities in accordance with good management practices after the County gives written notice and a reasonable opportunity to cure;
  - (d) County authorization to seek injunctive relief if the owners or Owners Association fail to maintain the stormwater facilities in accordance with good management practices after the County gives written notice and a reasonable opportunity to cure;
  - (e) Reports by a qualified consultant regarding stormwater detention, soil stabilization, erosion and siltation control, and stormwater runoff quality mitigation. Such reports shall note the presence or absence of hydric soils, karst features, geologic hazard features, existing vegetation, flood prone areas, slopes in excess of twelve (12) percent, perennial and intermittent streams, receiving water bodies for drainage, and the drainage distance to the Fee Take Line. These features shall be marked on a project site map and addressed in the erosion and sediment control and drainage plans.
- (6) All construction projects in the Lake Monroe and Lake Griffey watersheds which require a grading permit shall be inspected a minimum of every two weeks from ground breaking to stabilization, and within forty-eight (48) hours of any precipitation event exceeding a ten (10) year, 24-hour precipitation event. Inspections shall be carried out by the County erosion control inspectors, but may also be conducted by a licensed Professional Engineer under contract to the developer or construction contractor, subject to the submission of an Erosion Control Report after every inspection.
- (7) There shall be a pre-construction conference on the site of future development activity for all projects where more than one acre will be disturbed. This conference shall include the developer, contractor, job foreman, County erosion control inspector, and a representative from any other County or public agency as deemed necessary, based on review of

the project plans by planning staff. A public record of the conference will be kept in the file of the project construction permit file for the grading and improvement location permits.

- (8) All construction or development activities which are done in phases shall require stabilization of earth disturbance from each phase prior to the start of the next phase of the development. This requirement shall be enforced regardless of the size of the phase, development, or disturbance area.
- (B) Forestry Activities: forestry activities will be encouraged to employ Best Management Practices described in written form by the Indiana Department of Natural Resources.
- (C) Agriculture Activities, including Livestock Feeding: agricultural and livestock feeding activities should be carried out in conjunction with a soil and water conservation plan prepared in conjunction with the Natural Resources Conservation Service. Any area of the watersheds where land disturbance is prohibited shall also be restricted from any tillage or other earth disturbing activity. Confined livestock feeding operations shall not be permitted in the watersheds. Existing agricultural land uses shall be permitted in accordance with Chapter 803 of this Zoning Ordinance.

**825-3.**

**Specific Restrictions for Sensitive Lands**

- (A) Setback Distance from Lake Bodies: the minimum setback, measured horizontally, from the normal pool elevation shall be 125 feet. The following restrictions shall pertain to this designated area:

  - (1) There shall be no land disturbance of any kind within this setback, including construction, removal of vegetation, agricultural activity, logging operation, or construction of infrastructure.
  - (2) No erosion control or mitigation activities shall be carried out on the lake shore, at the water's edge, or along the Fee Take Line without the appropriate permits obtained from the County or any other required agency.
  - (3) Restoration and mitigation activities intended to reduce erosion and improve water quality on public land shall be carried out only with the permission of appropriate agencies, including the Army Corps of Engineers and the Indiana Department of Natural Resources.
  - (4) The following activities may be permitted:

    - (a) The clearing of brush less than three (3) inches in diameter to create pedestrian access to the Fee Take Line, to be no more than six (6) feet in width, and to be surfaced with permeable material to prevent erosion.
    - (b) The removal of tree branches or tree trunks provided said trees present a clear and immediate danger to property or persons. Tree stumps shall remain in place.
- (B) Setback Distance from Tributaries and Streams: riparian buffer zones, measured from the stream/vegetation interface line, shall be established to a distance of 100 feet from each side of all intermittent and perennial streams as shown on the U.S.

Geological Survey 7½ minute topographic maps. Agricultural uses existing prior to the adoption of this Zoning Ordinance are not required to provide riparian buffer zones if they are legal, pre-existing nonconforming uses (also known as grandfathered uses). Agricultural uses will need to provide riparian buffer zones only when there is a change in use from non-agricultural activities to agricultural uses. The following restrictions shall pertain to land within riparian buffer zones:

- (1)** No earth disturbance, removal of vegetation, logging operation, and agricultural and livestock feeding activities are permitted except for the following:

    - (a)** Installation or construction of infrastructure crossings,
    - (b)** Selective logging operations, as defined in the *Best Management Practices Handbook* from the Forest Practices Working Group of the Indiana Department of Natural Resources, subject to securing a logging permit from the County Planning Department, and
    - (c)** Removal of snags and logjams.
  - (2)** Where infrastructure crossings are necessary, erosion and sediment control plans will be submitted to the reviewing bodies. Such plans shall include:

    - (a)** Specifications for practices to be used in minimizing disturbance;
    - (b)** Methods for revegetation;
    - (c)** Documentation of any sensitive area which may be disturbed.
  - (3)** Removal of tree branches or tree trunks is permitted if said trees present a clear and immediate danger to property and persons. Tree stumps shall be left in place.
- (C)** Floodplains and Floodways: areas designated as flood prone areas, including floodways, floodway fringe areas, and floodplains, are subject to development conditions found in Chapter 808 of this Zoning Ordinance.
- (D)** Steep Slopes: there will be no earth moving or grading, large scale logging operations, or agricultural tilling on slopes designated as nondisturbable areas, and shall be referenced in the Monroe County Soil Survey.
- (E)** Limited Soils: any areas designated by the Monroe County Soil Survey as “Severe” with respect to development or movement activities must be identified and included within the mitigation activities proposals of required erosion and sediment control plans.
- (F)** Sensitive Karst and Other Geological Terrain: in any area in the watershed which contains sinkholes or other karst features where construction or significant earth disturbance is proposed, no construction or earth disturbance shall take place within fifty (50) feet of the outer rim of a sinkhole unless a geological and geophysical survey indicates that such construction or earth disturbance is appropriate. A

twenty-five (25) foot vegetative buffer from the outer rim toward the center of a sinkhole is also required.

- (1) A required geological and geophysical survey shall show the following:
  - (a) The identification of sinkholes, springs and caves on a site plan, drawn to scale;
  - (b) That the proposed earth disturbance or construction would not negatively and materially affect the water quality in the watershed;
  - (c) The structural integrity of any proposed structure with respect to the indicated karst feature(s).
- (2) Construction activity is prohibited in areas designated as the following, according to Special Report 47, "Geology for Environmental Planning in Monroe County, Indiana" (Indiana Department of Natural Resources):
  - (a) Limestone residuum over siltstone bedrock in the Ramp Creek Watershed, and
  - (b) New Providence Shale, the lowest formation in the Borden Group.

**825-4. Overlay Area Regulations**

In addition to the applicable regulations set forth in the Monroe County Zoning Ordinance, the following regulations shall apply to land use within the ECO Zone.

**(A) Area 1 Regulations**

- (1) The maximum land slope upon which any land disturbance involved in construction of buildings, driveways, roads, parking lots, and utilities can occur shall be twelve (12) percent. The percent slope shall be measured as a six (6) foot fall in any fifty (50) foot distance. The design should be suited to the lot to minimize the amount of cut and fill.
- (2) There shall be no disturbance of natural vegetation beyond the twelve (12) percent slope.
- (3) The maximum residential density that shall be allowed shall be one unit per five (5) acres.
- (4) Lots fronting on the lake require a minimum of 300 feet total lake frontage.
- (5) Each dwelling unit shall have at least one acre of total contiguous land which is equal to or less than twelve (12) percent slope.

**(B) Area 2 Regulations**

- (1) The maximum land slope upon which any land disturbance involved in construction of buildings, driveways, roads, parking lots, and utilities can occur shall be fifteen (15) percent. The percent slope shall be measured as

a 7.5 foot fall in any fifty (50) foot distance. The design should be suited to the lot to minimize the amount of cut and fill.

- (2) There shall be no disturbance of natural vegetation beyond the fifteen (15) percent slope line, subject to the requirements of 825-3.
- (3) The maximum residential density that shall be allowed shall be one unit per 2.5 acres.
- (4) Each dwelling unit shall have at least one acre of total contiguous land which is equal to or less than fifteen (15) percent slope.

**(C) Area 3 Regulations**

- (1) The maximum land slope upon which any land disturbance involved in construction of buildings, driveways, roads, parking lots, and utilities can occur shall be eighteen (18) percent. The percent slope shall be measured as a nine (9) foot fall in any fifty (50) foot distance. The design should be suited to the lot to minimize the amount of cut and fill.
- (2) There shall be no disturbance of natural vegetation beyond the eighteen (18) percent slope line, subject to the requirements of 825-3.
- (3) The maximum residential density that shall be allowed shall be one unit per 2.5 acres.
- (4) Each dwelling unit shall have at least one acre of total contiguous land which is equal to or less than eighteen (18) percent slope.

**(D) Area 4 Regulations**

- (1) The area designated on the Environmental Constraints Overlay Zone as Area 4 shall be developed at Area 3 densities unless the following conditions occur or exist:
  - (a) Sanitary sewer systems are installed and operating in the areas designated;
  - (b) Water supply systems are installed and are able to pump water sufficient to meet the needs of increased density; and
  - (c) Roadway level of service will be maintained without significant investment of public resources for corrective measures.
- (2) Provided that criteria in (1) above are met, the following regulations shall apply to development in Area 4:
  - (a) The maximum land slope upon which any land disturbance may occur is eighteen (18) percent. The percent slope shall be measured as a nine (9) foot fall in any fifty (50) foot distance.
  - (b) The maximum residential density that shall be allowed shall be three (3) units per acre where sufficient sanitary sewer capacity exists.



- (c) The maximum residential density that shall be allowed is 1 unit per 2.5 acres for septic sewer systems.
- (d) There shall be no disturbance of natural vegetation beyond the eighteen (18) percent slope and subject to the requirements in 825-3.
- (e) All approvals for density provisions under this section are conditional pending the submission and approval of a mitigation plan for managing problem sites within the Monroe Reservoir watershed, as detailed by the Environmental Constraints Overlay Committee Report, which was adopted by the County Commission on July 5, 1996.

**(E) Detention Basin Location Waiver**

- (1) Detention basins may be located beyond the slope restriction limits specified in this chapter if a waiver is approved by the Monroe County Drainage Board through a majority decision of the voting members present.
- (2) The Drainage Board may approve a waiver under this section only upon a determination in writing that:
  - (a) the amount of land disturbing activity will be reduced by granting the waiver;
  - (b) construction of the detention basin will not occur between October 1 and March 31;
  - (c) an erosion control plan that meets the requirements of Chapter 816 has been submitted for the access road and detention basin;
  - (d) granting the waiver will decrease erosion and increase the stability of the channel downstream; and
  - (e) approving the waiver will not have a significant adverse impact on the purpose of the Environmental Constraints Overlay Zone as described in section 825-1.
- (3) The Drainage Board has the authority to attach any conditions of approval it determines necessary to further the purposes of this chapter.

**825-5. Exceptions**

For existing parcels of record for which there are no sites for the construction of a building, associated driveway and utilities that meet the requirements of this Chapter, the following exceptions shall apply with regard to the construction of a single family residential unit:

- (A) Exception from provisions of Chapter 825-4 (A1). Land disturbances (including disturbance of natural vegetation), involved in the construction of buildings, driveways, parking lots, and utilities, may occur on land slopes of twelve (12%) percent or greater only to the extent necessary to construct the same. The design shall be suited to the lot to minimize the amount of land disturbance.

- (B)** Exception from provisions of Chapter 825-4 (A3). The provisions of 825-4 (A3) shall not apply.
- (C)** Exception from provisions of Chapter 825-4 (A4). The provisions of 825-4 (A4) shall not apply.
- (D)** Exception from provisions of Chapter 825-4 (A5). The provisions of 825-4 (A5) shall not apply.
- (E)** Exception from provisions of Chapter 825-4 (B1). Land disturbances (including disturbance of natural vegetation), involved in the construction of buildings, driveways, parking lots, and utilities, may occur on land slopes of fifteen (15%) percent or greater only to the extent necessary to construct the same. The design shall be suited to the lot to minimize the amount of land disturbance.
- (F)** Exception from provisions of Chapter 825-4 (B3). The provisions of 825-4 (B3) shall not apply.
- (G)** Exception from provisions of Chapter 825-4 (B4). The provisions of 825-4 (B4) shall not apply.
- (H)** Exception from provisions of Chapter 825-4 (C1). Land disturbances (including disturbance of natural vegetation), involved in the construction of buildings, driveways, parking lots, and utilities, may occur on land slopes of eighteen (18%) percent or greater only to the extent necessary to construct the same. The design shall be suited to the lot to minimize the amount of land disturbance.
- (I)** Exception from provisions of Chapter 825-4 (C3). The provisions of 825-4 (C3) shall not apply.
- (J)** Exception from provisions of Chapter 825-4 (C4). The provisions of 825-4 (C4) shall not apply.

All other provisions of Chapter 825 shall apply unless granted a variance or waiver in accordance with the provisions of this Ordinance. If there exists more than one site for the construction of a home, associated driveway and utilities or development of a land use activity other than one single family residence is proposed, development of the site shall be subject to the provisions of Chapter 825 unless otherwise granted a variance or waiver in accordance with the provisions of this Ordinance.

**KEY**

**Yellow highlight – stays in Planning ordinance ONLY**

**Blue highlight – stays in Stormwater ordinance ONLY**

**No highlight – both ordinances keep**

**Green Text – moved from another location in the same ordinance**

**Red strikethrough – to be deleted from this ordinance**

**Blue text – proposed new language**

**CHAPTER 829**

**ZONING ORDINANCE: KARST AND SINKHOLE DEVELOPMENT STANDARDS**

**829-1. Purpose and Intent**

- (A) The purpose of this chapter is to establish review procedures, use limitations, design standards and performance standards applicable to site developments that encompass or affect sinkholes or other karst features.
- (B) The intent of this chapter is to protect the public health, safety and welfare by requiring the development and use of environmentally constrained areas to proceed in a manner that promotes safe and appropriate storm water management and ground water quality.

**829-2 GENERAL PROVISIONS**

(B) Any report, study, plan, calculation or proposal required by this chapter shall be provided by the petitioner at the petitioner's expense.

(A) All applicable Federal, State and Local permits shall be obtained prior to construction.

(B) See the Stormwater Ordinance Chapter XX for Stormwater Permit submittal requirements.

**829-35. Permit Requirements**

No person or persons shall engage in the grading of land or modification of a sinkhole within the SCA or the area that would be covered by a SCA as described in 829-3(C)X without first securing an improvement location permit from the Administrator and a Stormwater Permit as applicable by Chapter X.

(A) The owner of the property or person having an interest therein shall submit an application for a permit to the Administrator along with the sinkhole evaluation required by 829-4 and MS4 Coordinator. The Administrator shall submit all applications to the County Drainage Engineer for review and comment and may, upon the Drainage Engineer's recommendation, submit an application may proceed to the Drainage Board for review and comment at the MS4 Coordinator's discretion.

(B) Upon review of the information presented by the applicant, the site, and other information as may be available, the Administrator may issue a permit for work to be performed in the SCA.

- (1) All work shall be performed in accordance with the requirements of the Zoning Ordinance and any conditions of permit approval; and,
- (2) The Administrator may designate certain areas where grading or construction equipment is not permitted or is otherwise limited.

829-42.

**Policy**

Unless expressly stated otherwise or contrary to context, the provisions of this chapter shall be interpreted and applied in accordance with the following policies:

(B) Development in areas that encompass or affect sinkholes or other karst features (i.e., in “sinkhole areas”) is prohibited unless expressly permitted by this chapter or until it is demonstrated that the development would have no significant detrimental impact on storm water management or ground water quality.

~~(A)~~

~~(B) Potential impacts on storm water management and ground water quality must be identified, assessed and addressed through written studies at the earliest stages of the development approval process (e.g., during the preliminary plat, development plan or site plan approval stages).~~

~~(C) The extent and sophistication of any required study should directly reflect the nature and complexity of the proposed development and of the development site (e.g., the more complex the karst features, the more extensive and sophisticated the study).~~

~~(D)(A) All applicable Federal, State and Local permits shall be obtained prior to construction.~~

829-53.

**Development Requirements Applicability**

(A) This chapter shall apply to all public, private and institutional land disturbing activities, with the following exception:

(1) Logging, mineral extraction, and agricultural uses.

(a) If exempt from this Ordinance, applicant shall still comply with the Stormwater Permit requirements of Chapter XX

(b) Accessory structures and roadways used for mineral extraction uses shall comply with the Ordinance if there is an anticipated impact on any adjacent property;

~~(b)~~(c) Accessory structures and roadways used for logging and agricultural uses shall comply with the Ordinance; and,

The above notwithstanding, the filling or plugging of a sinkhole with any material (e.g. earthen, manmade, animal or vegetable) in a way that adversely affects stormwater management or groundwater quality is prohibited. Unpermitted ~~(d)~~ ~~Altered Sinkholes. Filling or altering of sinkholes without an Improvement Location Permit~~ without an improvement location permit constitutes a zoning violation. In the event, corrective measures must be taken. No corrective or remedial measures shall be undertaken until a remediation plan has been approved by all relevant County entities or representatives and the Administrator has issued an improvement location permit for the plan. No building permits will be issued, or zoning or subdivision approvals granted until the remedial measures specified in the improvement location permit have been completed and approved.

~~(e)~~(d)

~~(B)(A) Any report, study, plan, calculation or proposal required by this chapter shall be provided by the petitioner at the petitioner's cost.~~

#### 829-4. Sinkhole Delineation and Development Requirements

~~(A)~~(C) Sinkhole conservancy areas (SCA) shall be established to the following minimum standards ~~in all sinkhole areas subject to the sinkhole evaluation requirement of Section 829-4.:~~

(1) For all sinkholes and compound sinkholes, the SCA shall, at a minimum, encompass the entire sinkhole and all of the area within fifty (50) feet of the largest adjoining closed contour to the sinkhole utilizing encompass the entire sinkhole and all of the area within fifty (50) feet of best available data.

(2) If a SCA is required to be established on a parcel that was not, or will not be created by recorded plat, a legal description of the SCA shall be included on the recorded deed of the parcel.

(3) Post-construction stormwater runoff beyond limits of the SCA shall be diverted from the sinkhole. Maximum allowed stormwater runoff to the SCA area shall be limited to the runoff accepted prior to the disturbance.

(4) All SCAs shall be designated as a Drainage Easement per Chapter XX

~~(2) A drainage easement covering the post-development flooding area is provided for any off-site sinkhole or portion of a sinkhole which receives increased peak rates of runoff from the site. If the receiving sinkhole is not contiguous to the site, an easement must also be provided for the waterway which connects the site to the sinkhole.~~

(5) Minimum Floor Elevations of development within the Sinkhole rim shall meet the requirements of the Chapter XX

(C) Karst-Related Non-Buildable Areas. In addition to establishing a plan for grading and use of construction equipment, the Administrator may, based upon the topography, geology, soils, history of the sinkhole (such as past filling) and the developer's engineer's storm water analysis and plan, establish sinkhole-related non-buildable areas:

(1) No buildings, parking areas, grading or other structures shall be permitted within the sinkhole-related non-buildable area unless otherwise authorized by the Administrator; and

(2) No private drives, streets, and highways shall be permitted within the sinkhole-related non-buildable area unless the County Highway Engineer and Drainage Engineer conclude that traffic safety considerations outweigh stormwater and water quality considerations.

~~(1) For sinkholes less than or equal to one quarter (0.25) acre in area, the SCA shall, at a minimum, encompass the entire sinkhole and all of the area within twenty five (25) feet of the sinkhole rim.~~

~~(2) For all sinkholes greater than one quarter (0.25) acre in size, the SCA shall, at a minimum, encompass all of the area within fifty (50) feet of the post-development sinkhole flooding area as determined in 829-6 or all of the area within twenty five (25) feet of the sinkhole rim, whichever is less.~~

~~(3) For compound sinkholes, the SCA shall be established in accordance with parts (1) and (2) above for each component sinkhole and for the compound sinkhole. For example, if the compound sinkhole is greater than one quarter (0.25) acre in area, the SCA shall comply with part (2). The SCA for sinkholes that are less than one quarter (0.25) acre in area and that are within the compound sinkhole must comply with part (1). It is possible that areas within the rim of a compound sinkhole will not be subject to a SCA.~~

~~If a SCA is required to be established on a parcel that was not, or will not be created by recorded plat, a legal description of the SCA shall be included on the recorded deed of the parcel.~~

**(D) Setbacks and Use Restrictions. The following setbacks and use restrictions are established.**

**(1) No new construction of any of the following shall be permitted within the SCA:**

**(a) Commercial or industrial structures;**

- (b) Private drives, streets, and highways unless the County Highway Engineer and Drainage Engineer conclude that traffic safety considerations outweigh stormwater and water quality considerations;
- (c) Storage yards or parking lots for materials, vehicles and equipment;
- (d) Residential structures and accessory structures;
- (e) Public, semi-public and office facilities;
- (f) Swimming pools and other amusement and recreational services unless expressly permitted; and/or
- (g) Stormwater detention features that have not been approved by the drainage board.

~~(e)~~

(2) Construction of the following shall not be permitted within twenty-five (25) feet of the ~~sinkhole rim regardless of size of sinkhole~~ Sinkhole Conservancy Area (SCA):

- (a) structures for storage of hazardous material(s); and/or
- (b) any structure associated with a use allowed in Light Industrial (LI) or Heavy Industrial (HI) zones.
- ~~(b)~~
- (c) Sewage Disposal Systems (Including but not limited to, Sewer connections, Septic tank-absorption field system, private sewage disposal system, etc.)

~~(3) Residential, commercial, and industrial structures and public, semi-public and office facilities shall not be constructed within the sinkhole rim unless the lowest floor elevation is a minimum of five (5) feet above the sinkhole flooding elevation, or one (1) foot above the lowest elevation on the sinkhole rim, whichever is less, and provided that a statement of a registered professional engineer or geologist is submitted to the Administrator (see definitions Chapter 801) indicating that foundation conditions are suitable for such structures.~~

~~(4) Individual Wastewater Systems~~

- ~~(a) Septic tanks shall not be located within the SCA.~~
- ~~(b) Septic Disposal Fields or wastewater stabilization ponds ( lagoons) shall not be located within twenty five (25) feet of the SCA.~~

~~(5) Pesticides and fertilizers may be used in sinkhole areas only in accordance with the rules and regulations of the State of Indiana Pesticide Review Board and with industry standards.~~

(6) Operation of heavy construction equipment is prohibited in the SCA unless:

- (a) it is demonstrated to the Administrator that the operation of such equipment is necessary to prevent clear and imminent danger to persons and property;
- (b) the operation of such equipment is necessary to implement a drainage and/or erosion control plan approved by the Drainage Board; and/or
- (c) if the operation of such equipment is required for the removal of material from a previously filled sinkhole.

(7) Underground utility lines (excluding Sewage Disposal System connections), equipment and facilities shall be installed in a manner that does not disturb a sinkhole eye or disrupt the natural pattern of storm runoff into the sinkhole. ~~Sanitary sewer lines installed within a SCA shall be water grade pipe.~~

(8) Recreational facilities such as unpaved hiking, jogging, and bicycling trails, playgrounds, and exercise courses, are permitted within the SCA.

(9) Golf courses and grass playing fields are permitted within the SCA subject to approval of a Management Plan for use of pesticides and fertilizers by the Administrator.

(10) Clearing and pruning of trees as well as understory, and limited grubbing of roots is permitted within the SCA provided that equivalent or improved protective living vegetative ground cover is maintained.

(11) Landscaping and minor gardening is permitted in the SCA provided erosion and sediment discharge is limited through use of minimum tillage and mulches. Normal yard and landscaping maintenance is permitted.



(12) Construction of light incidental landscaping and recreational structures (such as gazebos, playground equipment, etc.), is permitted in the SCA but not within the sinkhole eye. Such structures may not be placed within a SCA on excavated foundations or concrete pads but may be placed on small concrete post-hole foundations.

The above notwithstanding, no land disturbing activity may occur within a SCA if that development, construction or use is determined by the Administrator to violate the intent of this chapter.

### 829-5 Policy for the Emergence of New Sinkholes

All newly emerging sinkholes are subject to the Stormwater Ordinance Chapter XX

~~(E) Newly formed or pre-existing sinkholes that become active in a way that causes an immediate threat to nearby structures, roadways, persons, and/or property may be stabilized and filled provided existing drainage patterns are not changed. This subsection authorizes conditional, emergency action to remediate a hazardous condition. However, within thirty (30) days of the action, the person responsible for taking the action shall submit a report to the Administrator detailing the actions used to stabilize and/or fill the sinkhole. The report shall be reviewed by the County Drainage Engineer and County Surveyor to determine whether existing drainage patterns were changed by the action. If the Engineer and Surveyor find that existing drainage patterns were changed, the person responsible for the action shall promptly take all measures necessary to restore the drainage patterns and to otherwise comply with this Chapter.~~

~~(F) Stormwater Detention in Sinkholes. The Administrator, upon the Drainage Board's recommendation, may waive detention requirements to allow increased runoff into sinkholes and may authorize excavation within a sinkhole flooding area in order to provide additional water detention storage, upon finding that:~~

~~(1) the flooding concerns expressed through Section 829-6 will be satisfactorily addressed;~~

~~(2) there are no other areas on the site suitable for detention; and~~

~~(3) there will be no significant impact on the karst system or upon water quality.~~

~~In cases where concentrated runoff is directed to sinkholes, temporary and permanent erosion control measures, as detailed in a plan approved by the Administrator shall be implemented to prevent channel erosion.~~

~~(G) — Modification of Sinkholes to Increase Outflow Rates. Increasing outflow rates of sinkholes by excavating the sinkhole eye or installing disposal wells for diverting surface runoff to the groundwater system is prohibited, unless:~~

~~(1) — it is demonstrated to the satisfaction of the Administrator and/or the Drainage Engineer that such an action is necessary to safeguard persons or property from clear and imminent danger; or~~

~~(2)(1) — such an action is required to implement a drainage and/or erosion control plan that was approved by the Administrator. —~~

~~(I) — Altered Sinkholes. Filling or altering of sinkholes without an improvement location permit constitutes a zoning violation. In the event, corrective measures must be taken. No corrective or remedial measures shall be undertaken until a remediation plan has been approved by all relevant County entities or representatives and the Administrator has issued an improvement location permit for the plan. No building permits will be issued, or zoning or subdivision approvals granted until the remedial measures specified in the improvement location permit have been completed and approved.~~

~~(I) — Airport Evaluation. With respect to all land owned, used and/or held by the Monroe County Board of Aviation Commissioners (BAC) for airport purposes, a Section 829-4 sinkhole evaluation (Airport Evaluation) may be made for the entire property (Airport Property). If made for the entire Airport Property, the Airport Evaluation shall be submitted to the Administrator, the Monroe County Drainage Board and the Monroe County Plan Commission for their review. Upon a finding of compliance with this chapter and with other relevant County Code chapters, the foregoing entities shall approve the Airport Evaluation.~~

~~(1) — All future development, construction and land disturbing activities (Development Activities) at the Airport Property shall be:~~

~~(a) — Consistent with the approved Airport Evaluation;~~

~~(b) — Remedial actions suggested by the Airport Evaluation and required as a part of the Airport Evaluation approval may be implemented at one time or may be implemented in phases in conjunction with future Development Activities; and,~~

~~(c) — For each proposed Development Activity, BAC shall seek site plan approval and, in connection with that process, shall submit for review and approval that portion of the Airport Evaluation relevant to the proposed Development Activities.~~

~~(2) — The original Airport Evaluation shall remain in full force and effect for a period of five (5) years from the date it is approved by the County Planning Commission. During that period of time, Development~~

~~Activities at the Airport Property are subject to the approved terms and provisions of the Airport Evaluation and to the zoning and drainage regulations in effect on the date the Airport Evaluation was approved.~~

- ~~(3) The Airport Evaluation shall be re-evaluated after a five (5) year period.
  - ~~(a) The BAC may apply for additional five (5) year extensions without limitation;~~
  - ~~(b) Each request for a re-evaluation of the Airport Evaluation shall be reviewed by the Administrator and may be approved administratively, subject to compliance with current law; and,~~
  - ~~(c) If the Administrator finds that further extension of the Airport Evaluation is not possible under the Federal, State or County Code regulations in effect at the time of review, the BAC shall be promptly notified and shall be given a period of one (1) year beyond the expiration of the current five (5) year period to bring the Airport Evaluation into compliance with the relevant regulations.~~~~
- ~~(4) The Airport Evaluation shall be consistent with the Federal and State authorities with respect to Airport Property development requirements.
  - ~~(a) Federal and State standards and requirements will supersede local standards in the event of a conflict or discrepancy; and~~
  - ~~(b) In the event that Federal and/or State standards change during the period Airport Evaluation approval, activities may continue in accordance with such changes until the end of the period for which the Airport Evaluation was approved.~~~~

#### **~~829-4. Sinkhole Evaluation and Plan Requirements~~**

~~A Sinkhole Evaluation shall be performed for each site subject to this chapter (i.e., sites upon which sinkholes are fully or partially located and/or which drain to sinkholes). A Sinkhole Evaluation shall include the information set forth in subsections A through F of this section.~~

~~The following types of developments or sites may be excepted from full compliance with the Sinkhole Evaluation requirements upon the petitioner's request and a finding by the Administrator that significant drainage or water quality impacts will not result from the development or the use of the site:~~

- ~~(1) administrative and minor subdivisions;~~
- ~~(2) lots created greater than 10 acres for agricultural and residential uses;~~
- ~~and~~

~~(3) existing lots of record for which single family residential use is proposed.~~

~~The above notwithstanding, neither the Administrator nor the Drainage Board may except a development or a site from subsection 829-4 (E). The burden of proof for establishing that there will be no significant impacts shall rest with the petitioner.~~

### 829-6 Plat, Site Plan, Development Plan, and Plot Plan Requirements

(A) A plat, plot plan, ~~or site plan, or Development Plan~~ for the proposed subdivision or development, setting forth the following information for each of the enumerated items:

(1) Sinkholes

~~(a) Proposed SCA in accordance with Chapter 829-4.~~

~~(E) and the approximate location of all karst features tied to the parcel boundaries, must be shown on the final plat based on the best available mapping and/or noted on the deeds if no plat is recorded for the subdivision.~~

(a) Location and limits of the area of the sinkhole depression as determined by field surveys or other reliable sources as may be approved by the Administrator. Location of sinkholes based solely upon USGS 7 ½ Minute Series Quadrangle Maps will not be considered sufficient unless field verified by a registered Indiana Surveyor, Engineer, or geologist.

(b) Location and elevation of the sinkhole eye or low point.

(c) Topographic contours at maximum intervals of two (2) feet, and spot elevations sufficient to determine the low point on the sinkhole rim and the profile of the potential overflow areas.

(d) Minimum floor elevations of any existing structures located within the sinkhole rim.

~~(e)(e) Elevation of any public or private roadway or drive located within or adjacent to the sinkhole. (k) The location of the foregoing items with respect to the location of the proposed or existing roads, detention ponds, significant landscaping features, property lines, underground utilities, and other structures.~~

~~(2) Flooding limits as determined in Section 829-6 by Chapter XX~~

~~(3) Water considerations specified in Section 829-7, including, without limitation:~~

(a) The approximate location of public or private water supply sources such as springs or wells within 500 feet of the site.

(b) Boundaries of any known recharge areas to wells or springs.

(14) Other geologic features: location of caves, springs, faults and fracture trends, geologic mapping units.

~~(i)(5)~~ Proposed discharge points: the location, type and size of all points at which concentrated discharges of stormwater into the sinkhole are proposed. The drainage area to each point of concentrated discharge shall be delineated on the plan and the size of the drainage area noted.

~~(a)(6)~~ Existing watercourses which drain into the sinkhole.

~~(7)~~ (j) All other information required to demonstrate or assess compliance with this chapter, as specified by the Administrator.

~~(k) The location of the foregoing items with respect to the location of the proposed or existing roads, detention ponds, significant landscaping features, property lines, underground utilities, and other structures.~~

~~(B)(k)~~ A drainage area map showing the sinkhole watershed area, and where the site is located in a sinkhole cluster area. This map shall be extended to include, in the watershed area, any sinkholes located downstream of the site which may receive overflow drainage from the site.

~~(C)(A) Proposed SCA in accordance with Chapter 829-4.~~

~~(D)~~ An analysis of the orientation and flow of the sinkhole drainage system, as detailed on the subsection (B) map. The use of dye trace injection testing to produce an accurate mapping of the system may be required by the Administrator when the system drains towards an area that has known flooding problems and for which the flow pattern has not been established through previous dye testing, and when significant increases or decreases in the runoff to sinkholes is expected to result from the proposed development. Significant increases generally occur if the residential density is greater than one lot per two acres (or a commercial development with equivalent impervious surfaces).

~~(E)~~ The approximate location of karst features must be shown on the final plat based on the best available mapping and/or noted on the deeds if no plat is recorded for the subdivision.

~~(F)~~ (L) All other information deemed necessary by the Administrator or MS4 Coordinator.

## ~~829-5. Permit Requirement~~

~~No person or persons shall engage in the grading of land or modification of a sinkhole within the SCA or the area that would be covered by a SCA as described in 829-3 (C) without first securing an improvement location permit from the Administrator.~~

~~(A) The owner of the property or person having an interest therein shall submit an application for a permit to the Administrator along with the sinkhole evaluation required by 829-4. The Administrator shall submit all applications to the County Drainage Engineer for review and comment and may, upon the Drainage Engineer's recommendation, submit an application to the Drainage Board for review and comment.~~

~~(B) Upon review of the information presented by the applicant, the site, and other information as may be available, the Administrator may issue a permit for work to be performed in the SCA.~~

~~(1) All work shall be performed in accordance with the requirements of the Zoning Ordinance and any conditions of permit approval; and,~~

~~(2)(1) The Administrator may designate certain areas where grading or construction equipment is not permitted or is otherwise limited.~~

~~(C) Karst Related Non-Buildable Areas. In addition to establishing a plan for grading and use of construction equipment, the Administrator may, based upon the topography, geology, soils, history of the sinkhole (such as past filling) and the developer's engineer's storm water analysis and plan, establish sinkhole-related non-buildable areas:~~

~~(1) No buildings, parking areas, grading or other structures shall be permitted within the sinkhole-related non-buildable area unless otherwise authorized by the Administrator; and~~

~~(2)(1) No private drives, streets, and highways shall be permitted within the sinkhole-related non-buildable area unless the County Highway Engineer and Drainage Engineer conclude that traffic safety considerations outweigh stormwater and water quality considerations.~~

#### **829-6. Flooding Considerations**

~~(A) Sinkhole Flooding Area. Except in cases in which the annual exceedance probability (AEP) of 1% (100 year storm) has been determined in a published flood insurance study, the sinkhole flooding area shall be determined for each sinkhole for both pre-development and post-development conditions, assuming no subsurface outflow from the sinkhole.~~

Where the estimated volume of runoff exceeds the volume of the sinkhole depression, the depth, spread and path of overflow shall be estimated using methods established by the Drainage Board and shown on the plan.

The overflow volume shall be included in determining the maximum estimated flooding elevations in the next downstream sinkhole. This analysis shall continue downstream until the lowest sinkhole of the sinkhole cluster is reached or overflow reaches a surface watercourse.

The volume of runoff considered shall be that which results from a rainstorm with a 1% AEP and a duration of forty eight (48) hours. The runoff volume shall be determined by the method set forth in the Natural Resource Conservation Service's TR-55 Manual.

No further flooding analysis will be required provided that:

(1) The post development flooding area of any sinkhole which receives drainage from the site is located entirely on the site.

(2) A drainage easement covering the post development flooding area is provided for any off-site sinkhole or portion of a sinkhole which receives increased peak rates of runoff from the site. If the receiving sinkhole is not contiguous to the site, an easement must also be provided for the waterway which connects the site to the sinkhole.

(3) The minimum floor elevation of any existing structure is at least two (2) feet higher than the estimated flooding elevation from the 1% AEP 48-hour storm.

(4) The increase in volume of runoff from the site does not cause the flooding depth on any existing public road to exceed the maximum depth as determined by the Drainage Board.

(B) Detailed Flooding Analysis. In cases where the conditions set forth in (A) above cannot be met, a detailed flooding analysis will be required if any increase in runoff volume is proposed or expected. As part of the detailed flooding analysis, a runoff model must be made and a reservoir routing analysis performed for the sinkhole watershed using hydrograph techniques as established by the Drainage Board.

(C) The following alternative methods may be proposed and approved, singly or in combination, to keep flooding levels at pre-development levels:

(1) Diversion of Excess Runoff to Surface Watercourses. Where feasible, increased post development runoff may be diverted to a surface watercourse, provided that

(a) Any increase in peak runoff rate in the receiving watercourse does not create or worsen existing flooding problems downstream; and

(b) The diverted storm water remains in the same surface watershed.

Storm sewers, open channels and other appurtenances provided for diversions shall be designed in accordance with applicable sections of these Design Criteria.

The effect of diverted water on downstream watercourses and developments, and requirements for additional detention facilities prior to release of runoff to the surface watercourse shall be determined as established by the Drainage Board.

(2) Storage of Excess Runoff within the Sinkhole Watershed. If consistent with the intent of this chapter, detention facilities may be constructed within the sinkhole watershed or the area of the sinkhole outside of the sinkhole flooding area as determined for post-development conditions.

(D) The flooding considerations set forth in this section are designed and are intended to ensure that:

(1) Inflow rates to the sinkhole are maintained at or below pre-development values; and

(2) Sediment and erosion control and water quality considerations set forth in this chapter can be satisfied.

#### **829-7. Water Quality Considerations**

Because sinkholes provide direct recharge routes to groundwater, water quality in wells, caves, and springs may be affected by discharge of runoff from developed sinkhole areas. Consequently, and as more fully specified in subsections A through D below, the Sinkhole Evaluation must address potential impacts of proposed development on receiving groundwaters and must propose water quality management measures to mitigate such impacts.

(A) Receiving Groundwater Use. The Sinkhole Evaluation Report shall identify whether the site lies within a critical area or a sensitive area based upon the following classifications:

(1) Critical Areas. The following areas are classified as critically sensitive to contamination from runoff and thus, are critical areas for purposes of this chapter:

(a) Areas within 100 feet of private water supply wells.



~~(b) — Areas within 300 feet of public water supply wells;~~

~~(c) — Areas within 500 feet of springs used for public or private water supply;~~

~~(d) — Areas within 1000 feet of caves providing habitat to rare or endangered species;~~

~~The distances listed above may be extended by the Administrator where the recharge areas for a well, spring, or cave have been determined by studies by a qualified engineer or geologist. The length of the extension may be no greater than necessary to achieve the policies of this chapter;~~

~~(2) — Sensitive Areas. Sinkhole areas that are not within critical areas are classified as sensitive for groundwater contamination for purposes of this chapter;~~

~~(B) — Groundwater Contamination Hazard. The relative potential for groundwater contamination shall be classified as low, moderate, or high depending upon the nature of the proposed land use, development density and amount of directly connected impervious area. The Sinkhole Evaluation shall identify whether the proposed development poses a low, moderate, or high hazard to groundwater uses, as defined below:~~

~~(1) — Low Hazard. The following land uses are classified as posing a relatively low hazard to groundwater contamination:~~

~~(a) — Residential developments on sewer, provided directly connected impervious areas discharging to the sinkhole are less than or equal to one (1) acre in total area;~~

~~(b) — Parks and recreation areas;~~

~~(c) — Low density commercial and office developments, provided directly connected impervious areas discharging to the sinkhole are less than or equal to one (1) acre in total area; and~~

~~(d) — Discharge from graded areas less than or equal to one (1) acre.~~

~~(2) — Moderate Hazard. The following land uses are classified as posing a relatively moderate hazard to groundwater contamination:~~

~~(a) — Concentrated discharge from streets, parking lots, roofs, and other directly connected impervious areas having an area greater than one (1) acre and less than or equal to five (5) acres;~~

(b) Multifamily residential developments and higher intensity office developments, provided the directly connected impervious areas discharging to the sinkhole are less than or equal to five (5) acres; and

(c) Discharge from graded areas greater than one (1) acre and less than or equal to five (5) acres.

(3) High Hazard. The following land uses are classified as posing a high hazard to groundwater contamination:

(a) Collector and arterial streets and highways;

(b) Railroads;

(c) Concentrated discharge from streets, parking lots, roofs, and other directly connected impervious areas having an area greater than five (5) acres;

(d) Commercial, industrial, and manufacturing areas;

(e) Individual wastewater treatment systems;

(f) Commercial feed lots or poultry operations; and

(g) Discharge from graded areas greater than five (5) acres.

(C) Water Quality Management Measures. The majority of sinkholes drain a limited watershed area. For sinkholes where the surrounding drainage area is small enough that the area draining to the sinkhole flows predominantly as sheet flow, potential impacts on water quality can be addressed in many cases by erecting and maintaining reliable silt control barriers around the sinkhole during construction and providing a vegetative buffer area around the sinkhole to filter out potential contaminants.

When the volume of runoff into the sinkhole increases to the point where flow becomes concentrated surface flow, the degree of effort required to capture and filter out contaminants increases significantly.

Concentrated surface flow occurs naturally when the sinkhole watershed area reaches a sufficient size for watercourses leading into the sinkhole to form. Concentrated surface flow results as urbanization occurs due to construction of roads, storm sewers, and drainage channels. Subsurface flows can become concentrated through utility trenches.

(D) Mitigation of Stormwater Runoff. The following water quality management measures may be used to mitigate the impact of storm water runoff quality.

Temporary sediment controls are required for all sites. The other measures listed may be used singly or in combination as needed based upon the potential groundwater contamination hazard of the proposed development.

(1) Sediment and Erosion Control

(a) Nonconcentrated (sheet) flow: existing ground cover shall not be removed within twenty five (25) feet of the sinkhole flooding area and a temporary silt barrier shall be erected and maintained around the outer perimeter of the buffer area during the construction period. Vegetative cover must be of sufficient quality and density to provide desired filtration. If existing vegetative cover is sparse, it must be improved to sufficient quality and density to provide the desired filtration.

(b) Concentrated surface and subsurface flow: a sediment basin will be required at each point where concentrated flows are discharged into the sinkhole. Sediment basins shall be designed according to criteria set forth in the *Indiana Handbook for Erosion Control in Developing Areas*. A permanent sediment basin may be required by the Drainage Board in some cases. This requirement shall be based on the watershed area, the disturbance that the proposed project will create, and the availability of suitable sites for a sediment basin.

(2) Minimizing Directly Connected Impervious Area:

(a) The groundwater contamination hazard category for impervious areas may be reduced by reducing the amount of directly connected impervious area. This is the area of roofs, drives, streets, parking lots, etc., which are connected via paved gutters, channels, or storm sewers.

(b) Directly connected impervious areas can be reduced by providing sized grass swales, vegetative filter strips or other Best Management Practices to separate paved areas.

(3) Diversion of Runoff:

(a) Concentrated discharges to sinkholes can be reduced to manageable levels or avoided by diverting runoff from impervious areas away from sinkholes where possible.

(b) Diversions shall be done in a manner that does not increase flooding hazards on downstream properties and, generally, shall not be directed out of the surface watershed in which the sinkhole is located.

(4) Filtration Areas. For areas having a low groundwater contamination hazard and where flow into the sinkhole occurs as sheet flow, water quality requirements can be satisfied by maintaining a permanent vegetative buffer area with a minimum width of twenty five (25) feet around the sinkhole flooding area.

(5) Grassed Swales and Channels.

(a) For areas having a low groundwater contamination hazard, concentrated flows from directly connected impervious areas of less than one (1) acre may be discharged into the sinkhole through grassed swales and channels.

(b) Swales and channels shall be designed for non-erosive velocities and appropriate temporary erosion control measures such as sodding or erosion control blankets shall be provided.

(6) Storage and Infiltration. Storage and infiltration basins shall be designed to capture the first one half (0.5) of an inch of runoff from the tributary drainage area and release the runoff over a minimum period of twenty-four (24) hours. Standard outlet structures for sedimentation and infiltration are shown in the *Indiana Handbook for Erosion Control in Developing Areas*. Storage and infiltration will be required in the following cases:

(a) All areas having a high groundwater contamination hazard.

(b) Areas having a moderate groundwater contamination hazard and where concentrated inflow occurs.

(7) Hazardous and Toxic Materials. Facilities which involve storage or handling of hazardous or toxic materials shall comply with the State of Indiana Department of Environmental Management.

[end of chapter]

**KEY**

**Yellow highlight – stays in Planning ordinance ONLY**

**Blue highlight – stays in Stormwater ordinance ONLY**

**No highlight – both ordinances keep**

**Green Text – moved from another location in the same ordinance**

**Red strikethrough – to be deleted from this ordinance**

**Blue text – proposed new language**

**CHAPTER 829**

**ZONING ORDINANCE: KARST AND SINKHOLE DEVELOPMENT STANDARDS**

**829-1. Purpose and Intent**

- (A) The purpose of this chapter is to establish review procedures, use limitations, design standards and performance standards applicable to site developments that encompass or affect sinkholes or other karst features.
- (B) The intent of this chapter is to protect the public health, safety and welfare by requiring the development and use of environmentally constrained areas to proceed in a manner that promotes safe and appropriate storm water management and ground water quality.

**829-2 GENERAL PROVISIONS**

- (B) Any report, study, plan, calculation or proposal required by this chapter shall be provided by the petitioner at the petitioner's expense.
- (A) All applicable Federal, State and Local permits shall be obtained prior to construction.

(B) See the Stormwater Ordinance Chapter XX for Stormwater Permit submittal requirements.

**829-3. Permit Requirements**

No person or persons shall engage in the grading of land or modification of a sinkhole within the SCA or the area that would be covered by a SCA as described in 829-X without first securing an improvement location permit from the Administrator and a Stormwater Permit as applicable by Chapter X.

- (A) The owner of the property or person having an interest therein shall submit an application for a permit to the Administrator and MS4 Coordinator. The application may proceed to the Drainage Board for review and comment at the MS4 Coordinator's discretion.

- (B) Upon review of the information presented by the applicant, the site, and other information as may be available, the Administrator may issue a permit for work to be performed in the SCA.
  - (1) All work shall be performed in accordance with the requirements of the Zoning Ordinance and any conditions of permit approval; and,
  - (2) The Administrator may designate certain areas where grading or construction equipment is not permitted or is otherwise limited.

**829-4. Policy**

Unless expressly stated otherwise or contrary to context, the provisions of this chapter shall be interpreted and applied in accordance with the following policies:

- (B) Development in areas that encompass or affect sinkholes or other karst features (i.e., in “sinkhole areas”) is prohibited unless expressly permitted by this chapter or until it is demonstrated that the development would have no significant detrimental impact on storm water management or ground water quality.

**829-5. Applicability**

- (A) This chapter shall apply to all land disturbing activities, with the following exception:

- (1) Logging, mineral extraction, and agricultural uses.

- (a) If exempt from this Ordinance, applicant shall still comply with the Stormwater Permit requirements of Chapter XX
- (b) Accessory structures and roadways used for mineral extraction uses shall comply with the Ordinance if there is an anticipated impact on any adjacent property;
- (c) Accessory structures and roadways used for logging and agricultural uses shall comply with the Ordinance; and,

The above notwithstanding, the filling or plugging of a sinkhole with any material (e.g. earthen, manmade, animal or vegetable) in a way that adversely affects stormwater management or groundwater quality is prohibited. Unpermitted filling or altering of sinkholes without an Improvement Location Permit constitutes a zoning violation. In the event, corrective measures must be taken. No corrective or remedial measures shall be undertaken until a remediation plan has been approved by all relevant County entities or representatives and the Administrator has issued an improvement location permit for the plan. No

building permits will be issued, or zoning or subdivision approvals granted until the remedial measures specified in the improvement location permit have been completed and approved.

(d)

#### 829-4. Sinkhole Delineation and Development Requirements

(A) Sinkhole conservancy areas (SCA) shall be established to the following minimum standards:

- (1) For all sinkholes and compound sinkholes, the SCA shall, at a minimum, the largest adjoining closed contour to the sinkhole utilizing encompass the entire sinkhole and all of the area within fifty (50) feet of best available data.
- (2) If a SCA is required to be established on a parcel that was not, or will not be created by recorded plat, a legal description of the SCA shall be included on the recorded deed of the parcel.
- (3) Post-construction stormwater runoff beyond limits of the SCA shall be diverted from the sinkhole. Maximum allowed stormwater runoff to the SCA area shall be limited to the runoff accepted prior to the disturbance.
- (4) All SCAs shall be designated as a Drainage Easement per Chapter XX

(5) Minimum Floor Elevations of development within the Sinkhole rim shall meet the requirements of the Chapter XX

(C) Karst-Related Non-Buildable Areas. In addition to establishing a plan for grading and use of construction equipment, the Administrator may, based upon the topography, geology, soils, history of the sinkhole (such as past filling) and the developer's engineer's storm water analysis and plan, establish sinkhole-related non-buildable areas:

- (1) No buildings, parking areas, grading or other structures shall be permitted within the sinkhole-related non-buildable area unless otherwise authorized by the Administrator; and
- (2) No private drives, streets, and highways shall be permitted within the sinkhole-related non-buildable area unless the County Highway Engineer and Drainage Engineer conclude that traffic safety considerations outweigh stormwater and water quality considerations.

(D) Setbacks and Use Restrictions. The following setbacks and use restrictions are established.

- (1) No new construction of any of the following shall be permitted within the SCA:
  - (a) Commercial or industrial structures;
  - (b) Private drives, streets, and highways unless the County Highway Engineer and Drainage Engineer conclude that traffic safety considerations outweigh stormwater and water quality considerations;
  - (c) Storage yards or parking lots for materials, vehicles and equipment;
  - (d) Residential structures and accessory structures;
  - (e) Public, semi-public and office facilities;
  - (f) Swimming pools and other amusement and recreational services unless expressly permitted; and/or
  - (g) Stormwater detention features that have not been approved by the drainage board.
  
- (2) Construction of the following shall not be permitted within twenty-five (25) feet of the Sinkhole Conservancy Area (SCA):
  - (a) structures for storage of hazardous material(s); and/or
  - (b) any structure associated with a use allowed in Light Industrial (LI) or Heavy Industrial (HI) zones.
  - (c) Sewage Disposal Systems (Including but not limited to, Sewer connections, Septic tank-absorption field system, private sewage disposal system, etc.)



- (5) Operation of heavy construction equipment is prohibited in the SCA unless:
- (a) it is demonstrated to the Administrator that the operation of such equipment is necessary to prevent clear and imminent danger to persons and property;
  - (b) the operation of such equipment is necessary to implement a drainage and/or erosion control plan approved by the Drainage Board; and/or
  - (c) if the operation of such equipment is required for the removal of material from a previously filled sinkhole.
- (7) Underground utility lines (excluding Sewage Disposal System connections), equipment and facilities shall be installed in a manner that does not disturb a sinkhole eye or disrupt the natural pattern of storm runoff into the sinkhole.
- (8) Recreational facilities such as unpaved hiking, jogging, and bicycling trails, playgrounds, and exercise courses, are permitted within the SCA.
- (9) Golf courses and grass playing fields are permitted within the SCA subject to approval of a Management Plan for use of pesticides and fertilizers by the Administrator.
- (10) Clearing and pruning of trees as well as understory, and limited grubbing of roots is permitted within the SCA provided that equivalent or improved protective living vegetative ground cover is maintained.
- (11) Landscaping and minor gardening is permitted in the SCA provided erosion and sediment discharge is limited through use of minimum tillage and mulches. Normal yard and landscaping maintenance is permitted.
- (12) Construction of light incidental landscaping and recreational structures (such as gazebos, playground equipment, etc.), is permitted in the SCA but not within the sinkhole eye. Such structures may not be placed within a SCA on excavated foundations or concrete pads but may be placed on small concrete post-hole foundations.

The above notwithstanding, no land disturbing activity may occur within a SCA if that development, construction or use is determined by the Administrator to violate the intent of this chapter.

829-5 Policy for the Emergence of New Sinkholes

All newly emerging sinkholes are subject to the Stormwater Ordinance Chapter XX

(F)

(1)

**829-6 Plat, Site Plan, Development Plan, and Plot Plan Requirements**

(A) A plat, plot plan, site plan, or Development Plan for the proposed subdivision or development, setting forth the following information for each of the enumerated items:

(1) Sinkholes

(a) Proposed SCA in accordance with Chapter 829-4, and the approximate location of all karst features tied to the parcel boundaries.

(a) Location and limits of the area of the sinkhole depression as determined by field surveys or other reliable sources as may be approved by the Administrator. Location of sinkholes based solely upon USGS 7 ½ Minute Series Quadrangle Maps will not be considered sufficient unless field verified by a registered Indiana Surveyor, Engineer, or geologist.

(b) Location and elevation of the sinkhole eye or low point.

(c) Topographic contours at maximum intervals of two (2) feet, and spot elevations sufficient to determine the low point on the sinkhole rim and the profile of the potential overflow areas.

(d) Minimum floor elevations of any existing structures located within the sinkhole rim.

(e) Elevation of any public or private roadway or drive located within or adjacent to the sinkhole. The location of the foregoing items with respect to the location of the proposed or existing roads, detention ponds, significant landscaping features, property lines, underground utilities, and other structures.

(f) Flooding limits as determined by Chapter XX

(g) Water considerations, including, without limitation:

(a) The approximate location of public or private water supply sources such as springs or wells within 500 feet of the site.

(b) Boundaries of any known recharge areas to wells or springs.

(h) Other geologic features: location of caves, springs, faults and fracture trends, geologic mapping units.

(i) Proposed discharge points: the location, type and size of all points at which concentrated discharges of stormwater into the sinkhole are proposed. The drainage area to each point of concentrated discharge shall be delineated on the plan and the size of the drainage area noted.

(a) Existing watercourses which drain into the sinkhole.

(j) All other information required to demonstrate or assess compliance with this chapter, as specified by the Administrator.

(k) A drainage area map showing the sinkhole watershed area, and where the site is located in a sinkhole cluster area. This map shall be extended to include, in the watershed area, any sinkholes located downstream of the site which may receive overflow drainage from the site.

(L) All other information deemed necessary by the Administrator or MS4 Coordinator.

**[end of chapter]**

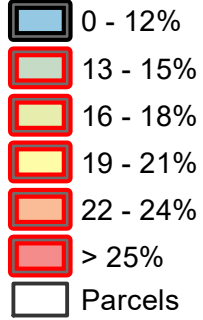
# Site Conditions Map

— Ex. Sinkhole using 2-Foot Contours

Petitioner

— 2-Foot Contours

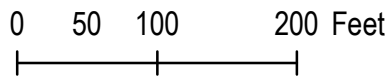
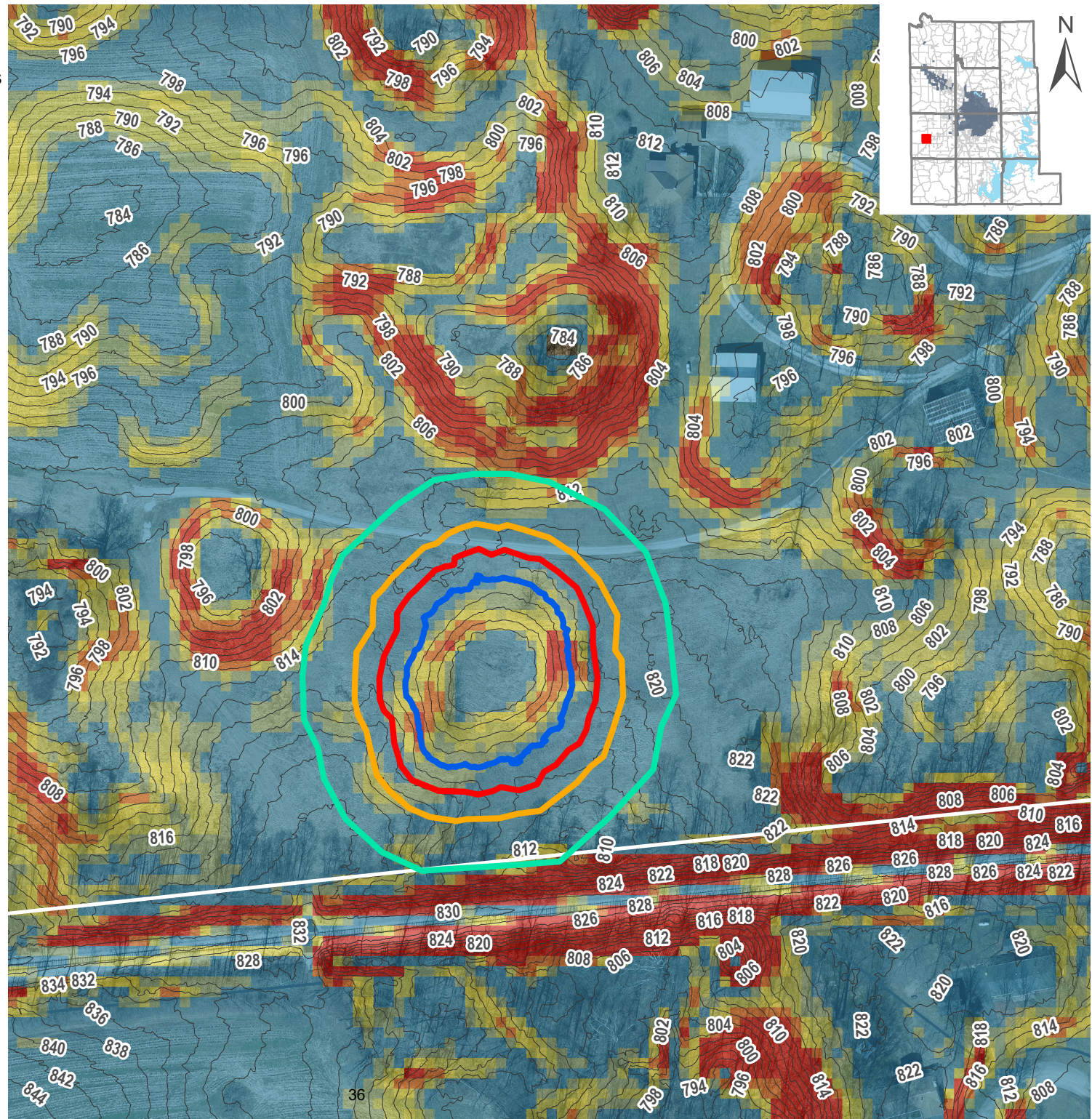
## Percent Slopes



— 100' Buffer from karst feature

— 50' Buffer from karst feature

— 25' Buffer from karst feature



Monroe County  
 Planning Department  
 Source: Monroe County GIS  
 Date: 9/19/2022



0 25 50 100 Feet  
|-----|-----|-----|-----|

 SINKHOLE DRAINAGE AREA     100 FT BUFFER     25 FT BUFFER