

MONROE COUNTY DRAINAGE BOARD
Wednesday May 3, 2023, at 8:30 AM
Location: Showers Building Room 106D
Hybrid Meeting with Virtual Attendance via Zoom

AGENDA

1. Call to Order
2. Approval of Minutes for: April 5, 2023 +*
3. Public Input for Items not on the Agenda
4. Business
5. Staff Reports/Discussion
 - a. Ch. 825 Discussion – Environmental Constraints Overlay Zone +
 - b. N Buskirk Rd. Petition to Drainage Board for Removal of Obstruction of a Natural Watercourse
 - c. Ch. 808 Discussion – Floodplain Management
 - d. Ch. 829 Discussion – Karst ordinance

Link to DRAFT Stormwater Management Ordinance (August 2022):

https://www.co.monroe.in.us/egov/documents/1669831347_72535.pdf

Link to DRAFT Stormwater Technical Standards Manual (August 2022):

https://www.co.monroe.in.us/egov/documents/1669831403_93922.pdf

6. Adjournment
 - a. Date of Next Meeting: Wednesday June 7, 2023, at 8:30 AM

+ Attachment Included

* Board Action Requested

Zoom Meeting Information:

<https://monroecounty-in.zoom.us/j/81406336371?pwd=WWxYd240SGpGdG0yR2Vra3BRSVpYUT09>

Meeting ID: 814 0633 6371

Password: 663262

Dial by your location:

+1 312 626 6799 US (Chicago)

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)349-2550, 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 is open to the public.

MONROE COUNTY DRAINAGE BOARD

Wednesday April 5, 2023, at 8:30 AM

Location: Showers Building Room 106D

Hybrid Meeting with Virtual Attendance via Zoom

MINUTES

MEMBERS PRESENT: Bob Autio, James Faber, Trohn Enright-Randolph (*ex officio*), Ginger Davis, Bill Riggert

ABSENT: Lee Jones

Staff: Donna Barbrick (Secretary), Kelsey Thetonia (MS4 Coordinator), Adam Rickert (Stormwater), Erica Penna (Stormwater Inspector), Daniel Brown (Planning), Anne Crecelius (Planning), Jackie Nester Jelen (Planning), TSD

Others: Tamby Wikle-Cassady, Daniel Butler, Terry Gentry (Gentry Services), Bill Williams

1. **Call to Order** at 8:41 by Bob Autio.
2. **Approval of Minutes for: January 4, 2023, and February 1, 2023** +* Autio asked about the acronym CRS and to have it spelled out in the minutes. Bill Riggert asked for a minor correction on page 4A of the packet. **Motion by Riggert to approve the January 4 minutes with corrections; second by Autio. Autio called the roll for a vote. Motion carried unanimously. Motion by Riggert to approve the February 1 meeting, second by Autio. Vote: AYES 3; ABSTAIN 1 (James Faber abstained); motion carried.**
3. **Public Input for Items not on the Agenda.**
Autio asked if there had been a meeting other MS4s. Thetonia said she had a meeting scheduled with them the next day. Trohn noted that MS4s have also been meeting at the Stormwater Environmental Education Team (SWEET) meetings.

4. Business

a. Wiley Farm PUD – Drainage Design +*

Kelsey Thetonia gave an overview of the site and the project within the Fieldstone area. She said as it stands now, the developers have the ability to develop this property as high density residential. She said drainage would be a big topic for this development. She said they are proposing a few different things. She said the first thing is to reroute the road network; the redesign would avoid sensitive areas, steep slopes and sinkholes on the site. She said the main thing I am bringing today is what is going to the Plan Commission, a proposal to change some of the uses of the site. She said they propose to have a small portion, 3 ½ acres, to go into commercial development for self-storage units and the rest of it would be medium density residential. She said the storage units would be 65% impervious surface and no more than 40% impervious surface for the remainder of the site including the roads. She said that 40% is in line with what the city has for medium density development. She said we have specific concerns about this site because it is in the Cave Creek watershed. She said today I want to talk about what the site is going to look like with the drainage requirements. Trohn commented that this has already gone to a preliminary hearing at the Plan Commission.

Thetonia displayed a map of the site and talked about where the sinkholes are located. She said the drainage goes from south to north on the site. She said she was considering a two-to-one replacement of the trees for this project. Davis said the storage units look like they are not going to impact the karst onsite but, downstream, there still would be significant addition to the subsurface flow rate. She asked if there a good reason to allow for the increase in impervious surface. She asked if we are already having issues with the capacity in this location. Thetonia said in 2017 we contracted out a detailed study with Christopher Burke back in 2017. She said I can refer you to the engineer who worked on that report. She said they came up with release rates for sub-watersheds based on runoff and it is very close to the critical

drainage release rates. She said that was what they calculated that the stream could handle. Davis said so based on that, there is not a lot of room for additional impervious in this watershed. Thetonia said yes, and this PUD was part of the original Fieldstone subdivision approved prior to that study. She said they are now proposing two ponds, each meeting critical drainage release rates. She mentioned studies recommending impervious liners in detention basins to reduce the amount of infiltration. There was a discussion of liners, clay and bedrock in the area. Thetonia said the ponds were intended to be dry detention.

Daniel Brown spoke. He said currently we are looking at several different recommendations. Trohn read the recommendations that had been talked about the Plan Commission meeting. He said we are recommending a positive recommendation for changing the housing density in some of the tracts. He talked about including new road configuration. He talked about changing the density for some of the tracts. He talked about designating common areas for each detention pond and for conservation area around the sinkhole. He said there was a negative recommendation for the added use, based on the incompatibility with Monroe County comprehensive plan. Riggert asked about one of the recommendations regarding the roads. Thetonia said we would ask them to recalculate the impervious surface, subtracting out the roads, for more clarity. Faber asked if the development would be for low-income housing. Thetonia said she was not sure.

Daniel Butler spoke. He spoke this project is proposed in phases. He said we propose 3.38 acres of commercial development for self-storage units. He said the developers would commit to lowering the impervious surface for the entirety of the site. He talked about detention. He said no residential is proposed for the first phase. Autio asked about monitoring of the ponds during construction. Trohn asked if the critical release rates were going to be enough in this area. Thetonia said the rates are already very conservative. There was a discussion of the 4-inch orifice and how to monitor and control the outflow.

Trohn said what they are currently allowed to do with the PUD is significant. He talked about the tradeoff perhaps being reasonable. Butler said the client is going out of their way to reduce the amount of housing on the site and the amount of impervious surface. Thetonia talked about subwatershed release rates and discharge calculations from the CB study. Faber asked what happens if the release rates do not work. Trohn talked about neighbors south of here being flooded and a sinkhole that has been increasing in size. There was a discussion of whether the proposed ponds would slow down the runoff compared to what is there now, with no detention.

Thetonia said Fieldstone is going to overtop at the spillway after about a 4-inch rain. Butler said the two proposed ponds would not be the only ponds. He said these two are only for Phase I. He said we would then come back to DB, if need be, for each future phase. He said we are committing to a lower amount of impervious area throughout the entire development. Trohn said they are wanting to add an allowed use in the one tract of 3.34 acres. Butler said we are proposing 65% maximum impervious for 3.34 acres alone and then the remainder of the site would be no more than 40% impervious. There was a discussion of the Fieldstone dam spillway not functioning as it was designed.

Thetonia gave a rundown of possible conditions. Autio asked for a motion to approve with conditions. There was a discussion of the HOA for the project and of maintenance requirements for the ponds.

Jackie Nester Jelen posted a summary in the meeting chat:

“Conditions of approval:

- Require release rates based on the critical release rates in accordance with Ch 761.
- Required monitoring during construction (water level monitoring to ensure compliance with critical release rates)
- Post construction monitoring by a third party to ensure basins are functioning properly for the first year, especially after heavy rainfall.
- Preliminary and Final drainage plan to be reviewed and approved by the Drainage Board.

Recommendations:

- Spillway issue to be reviewed by the Engineer. Potentially need off-site improvements for downstream improvements. If it is determined that the off-site improvements are inadequate, may be able to require fixes.

In the Stormwater ordinance already:

- Require as-builts of all stormwater facilities.”

Motion by Davis to approve with the conditions and recommendations. Second by Riggert. Vote by roll call: AYE (unanimous). Motion carried.

Autio asked about property buyouts in the Cave Creek watershed area. Davis outlined the steps involved in the process.

Terry Gentry (Gentry LLC) had comments. He said we would not be in favor of an easement. He said there is ample room on Fieldstone property without crossing our property. Davis suggested that Thetonia contact DNR about dam safety. Thetonia said this dam is not regulated by DNR but she is planning to get their opinion about it. Trohn commented that we are not in a position to require anything there, but we can make recommendations. He said I appreciate you coming to the meeting today and speaking.

b. K&S Rolloff Enforcement and Future Development – Drainage Design +*

Thetonia gave an overview of the site. She said this is a combination of a compliance case and a plan amendment. She said previously there were restrictions on where they could place fill material. She said they dumped concrete solids and other materials into a sinkhole. She said they are trying to amend their plan to show that this is now the new limit of dumping. She said they cannot dump in the sinkhole any longer. She said they also proposing some storage unit development. She said there are three sinkholes total on the site. She talked about the runoff from the site. She said previously someone at the county approved their plan to discharge into the sinkhole but it was protected by a line of bin blocks, which was thought to reduce the velocity. She said for the mitigation side of this, we asked for a karst study. She said the sinkholes appear to be stable. She said I prefer to avoid disturbance in the sinkhole. She said I asked Daniel Butler to calculate the high water elevation of the sinkhole to see if it would overtop. She said it stays within the close contours of Sinkhole B; if it were to overtop I would ask them to mitigate offsite impacts. She said I had them calculate that volume based on the new contours, and they got it all to stay within that area. She said I am leaning towards stabilization, not impacting it any further, and allowing the fill to stay. She said for the gravel lot area I am looking at more procedural measures, basically a stormwater pollution prevention plan. She said for the development, this is why I am bringing this to DB. She said it is not in a critical drainage area; I am looking to see if you would set a release rate for this development and if you can discharge it to the sinkhole or provide detention within a sinkhole, which is kind of what they are doing with the row of bin blocks. Davis asked about some sort of vegetative swale and bio retention. Thetonia said that would be the normal requirement from the ordinance. She said they would be adding parking.

Bill Williams said the site is basically used for storage of the dumpsters and they have also been cleaning out dumpsters on the site. Thetonia said they are asking to fill in some more, adding more concrete fill to the site. Trohn asked about Sinkhole B and about gravel going into the sinkhole and washing out.

Thetonia said she has not seen evidence of large gravel migrating. Autio had comments about the close contour area and using the critical release rates in this area.

Daniel Butler said we want to reiterate that the current owner is trying to do the right thing to make this site viable again. He said the wish of the owner is to keep the fill as is; they are working with IDEM currently.

Motion by Riggert to approve with condition to improve the bioretention criteria and soil amendments. VOTE: AYE (unanimous). Motion carried

c. Liberty Dr. Auto Complex – Preliminary Drainage Plan +*

Thetonia gave an overview of the site, including a county owned regional detention basin. She said this project plan has their own ponds on site. Jackie Nester Jelen said the two long buildings would be storage for general contractors and then the remaining site would be storage. She said the site has been graded and it has been sitting pending the approval of the added use. She said there is a storm sewer drainage easement and an access easement for the ponds. She said the developer is working with CBU to move a sewer main. She talked about the county's access to the pond.

Thetonia said they would be meeting critical release rate. She talked about potential BMPs for the site. She said she had a question about who would be responsible for the stormwater infrastructure in the drainage easement. The group agreed that the property owner is responsible for the pipes. **Motion to approve by Davis; seconded by Riggert. VOTE: AYE. Motion carried.**

5. Staff Reports/Discussion

a. Ch. 825 Discussion – Environmental Constraints Overlay Zone +

Thetonia said Planning staff has prepared comments for DB concerning the existing ordinance. She said there are specific provisions concerning soil and geology. Jackie Nester Jelen said one thing we would like to know from a DB perspective is on page 100, concerning the way we measure riparian areas. She said on page 101, we have information about soils, and we are not able to find exact references outside of this to determine what is non-buildable. She had a question about restricting building based on soil types. She said on page 102 there is a map of an area. She said it shows only one non-buildable area based on the soil type. She said on page 104, there is old language about a detention basin waiver; we would propose removing that from the ordinance because we do not want to oversee determining the adequacy of basins.

Thetonia said I think we can dig into soils database and pull out the soil types. She said a homeowner should not have to get an engineer. Nester Jelen said we were hoping to get this overlay soon and then by May or June to solidify this. She said at the end of September she should have a shapefile to share about soils.

b. N Buskirk Rd. Petition to Drainage Board for Removal of Obstruction of a Natural Watercourse

c. Ch. 808 Discussion – Floodplain Management

d. Ch. 829 Discussion – Karst ordinance

6. Adjournment

- a. Date of Next Meeting: Wednesday May 3, 2023, at 8:30 AM**

Meeting adjourned at 10:44 am.

Minutes approved: _____

President

Secretary

KEY

Blue highlight = Question as to whether this text goes into the Stormwater Ordinance

Red Text = Question as to whether the information is still useful and should stay in the ordinance

Yellow highlight = question as to whether the standard is still correct or needs to change

Black text = staying in the Planning Ordinance

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. Sites disturbing more than 0.75 ac or Common Plan for Development per Ch 761 shall be reviewed by the MS4 Coordinator; sites with disturbance less than 0.75 acres shall be reviewed during the Improvement Location Permit review stage. 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) Stormwater Permit required per Ch 761. See Ch 761 for information regarding responsibilities for Stormwater maintenance and facilities, as well as required application materials. 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.

Commented [JN1]: Drainage Board – How to better evaluate this standard. Possible administrative discretion. Look at soil leaving the site potentially? Incorporation of Stormwater BMPs (rain gardens, barrels, etc) as long as no further tree clearing. Building vertically as opposed to footprint expansion. Impervious surface max (sq ft vs % of lot) Other discretion?

Commented [JN2]: Maybe add less than 1 acre or 0.75 ac depending on Drainage Ord. The rest stays in Planning Ord

Commented [JN3]: 5 ac or greater of disturbance. Also cross reference Ch 815

Commented [JN4]: 761 – add into the reporting for self-compliance

Commented [JN5]: Ch 761 Stormwater Permit requirements. Also included is information regarding maintenance responsibility of stormwater features.

Add in better summary of what is in Ch 761.

- (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. A stormwater permit will be required per Ch 761.
- (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.

Commented [JN6]: Urban vs non-urban?

Keep regulations for logging in urban areas. Planning Dept approval prior to issuance of Stormwater permit

Commented [JN7]: Review with Legal

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

Commented [JN8]: Could reference maximum pool elevation.

Commented [JN9]: Alternatively change the setback number if keeping the language for normal pool elevation
Need to research how other reservoir setbacks are enforced.

IDOH has a setback of 200' for septic

Commented [JN10]: Check with Legal. Might only be able to regulate within the SFHA

Alternatively have a setback for impervious cover near the reservoirs

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.

Commented [JN11]: Still a good measurement per FOLM

For areas outside of ECO, maybe consider 50 ft (standard in CSGP)

Commented [JN12]: Drainage Board: Is there a better map that we can use to determine riparian buffer zones? Is there a better way to determine distance rather than 100 ft on either side?

Need to ask John Baeten RE: basemap vs topo map?

Could use National Hydrologic Dataset (NHG) map instead? KT to think of drainage area (10 ac or more?) and constrain the NHD map in house to then use on Elevate and use to enforce.

Look at what the stream data would capture in terms of existing structures

(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).

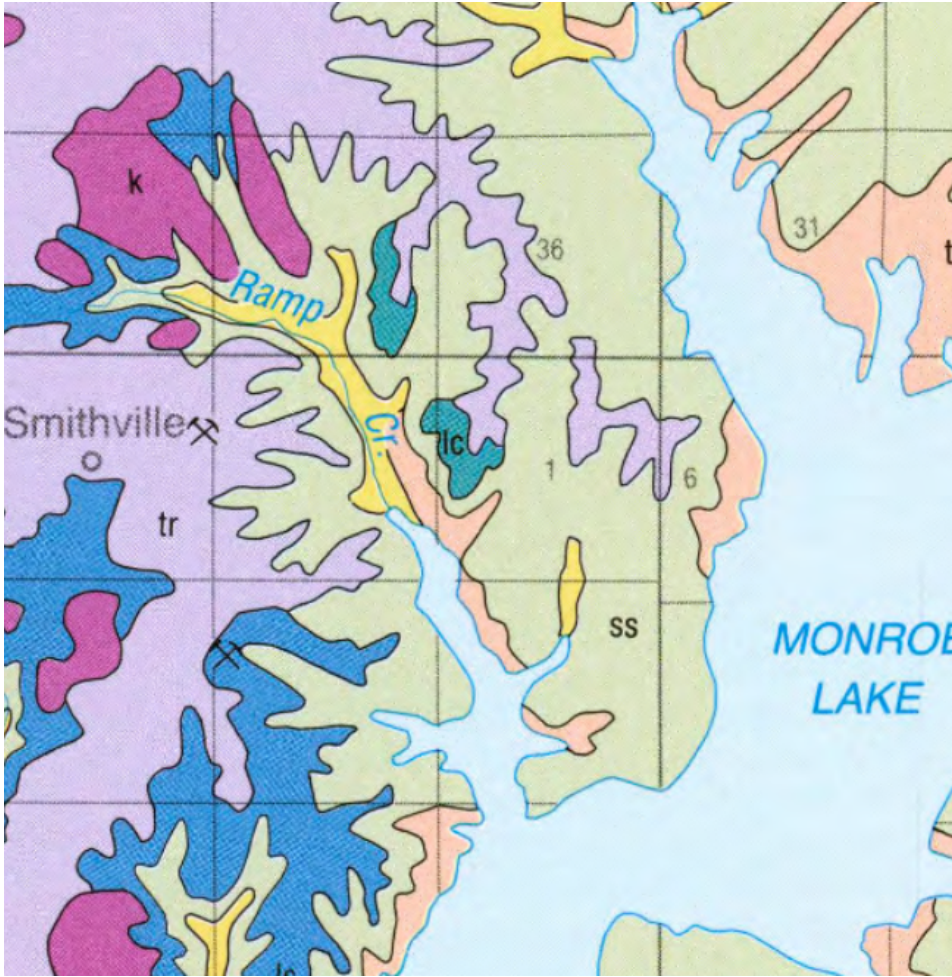
(2) Construction activity is prohibited in areas designated as the following, according to Special Report 47, "Geology for Environmental Planning in Monroe County, Indiana" (Indiana Department of Natural Resources):

- (a) ~~(a)~~ Limestone residuum over siltstone bedrock in the Ramp Creek Watershed, and

Commented [JNJ13]: Drainage Board: We cannot find an exact reference to nondisturbable areas or clarity around "severe" soils. Does anyone have more info and possibly a digital version of this report?

Commented [JNJ14]: Drainage Board: We would like to move this to the karst chapter. Is there special considerations we need to consider for areas of karst within the ECO?

Commented [JNJ15]: Drainage Board: Here is a link to this report: https://scholarworks.iu.edu/dspace/bitstream/handle/2022/12952/SR47_A1b.pdf?sequence=5&isAllowed=y Do you think that we could incorporate a restriction in a better way, such as under the Critical Drainage Area (Critical Geologic Area)



(b) New Providence Shale, the lowest formation in the Borden Group.

Commented [JN16]: Could reach out to Indiana Geological and Water Survey to see if they could create a shapefile for this. Unclear based on the maps/report where the New Providence Shale is located in the County.

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

Commented [JNJ17]: Could remove this from the ECO chapter and instead include a countywide development level threshold for review at Drainage Board for required detention or staff level determination (waiver/appeal detention to DB). Maybe some sort of rubric (ECO, Karst, Critical Watershed).

Report here:
<https://www.co.monroe.in.us/egov/documents/167995088722174.pdf>

Commented [JN18]: Drainage Board – Ideas for determining the maximum water levels and then if development is proposed after we have exceeded maximum water levels, would detention then be required for all development after that certain point?

Commented [JNJ19]: Drainage Board: should this language be removed and placed in Ch 761?

(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.