



October 17, 2022

City of Columbus
Division of Sewerage and Drainage
Attn: Greg Fedner, P.E.
Section Manager, Plan Review Section
1250 Fairwood Avenue
Columbus, OH 43206

**RE: *City of Columbus Stormwater Drainage Manual (SWDM) Type III Variance Request; Comment Response
Proposed Buckeye Rail Yard Redevelopment
4882 Trabue Road, Columbus, Franklin County, Ohio 43228***

Dear Review Team:

The purpose of this letter is to provide satisfactory answers to the comments/questions issued in a comment letter dated September 16, 2022. The answers are listed below in bold and are preceded by the comments/questions listed in the original letter.

- **Comment:** All three Alternative Exhibits must clearly show the existing features in sufficient detail (in particular, the ones impacted by the proposed development and requiring the variance) and the proposed site layout. Currently, the Preferred Alternative lacks the proposed layout.
 - **Response:** *All alternative exhibits now display existing stream/wetlands to be disturbed as well as proposed layouts.*
- **Comment:** The differences between the Alternatives must be clearly shown on the Exhibits and further explained in the description. Currently, graphically the Minimum Impact and the No Impact Alternatives show no discernible difference.
 - **Response:** *Alternatives updated to better reflect proposed disturbances. Differences can also be seen in data tables.*
- **Comment:** The numbering of the Exhibits in the Appendices is misleading and confusing; different exhibits have the same numbers. For example, EC2.0 exists in the Stream Relocation Plans (Appendix E) and also in the SCPZ Reforestation Plans (Appendix F). Please address.
 - **Response:** *Exhibit alternative naming updated to differentiate exhibits.*

- **Comment:** Maps should show the direction of stream flow.
 - **Response:** *Please use upstream and downstream callouts as well as arrow direction on streams to identify flow direction.*

- **Comment:** Please make sure the numbers in the Existing Stream Table on Exhibit EC3.1 and EC3.5 (Appendix E) showing individual drainage areas and SCPZ lengths/widths are correct – do not seem to add up (total SCPZ acreage appears to be 22.130 acres based on the ex. stream lengths and SCPZ widths, and not 20.478 Ac. as stated in the table). Please also verify that these numbers are the same throughout the application – for all streams.
 - **Response:** *Stream lengths revised and coordinated between sets.*

- **Comment:** On the Appendix B and C maps, where a bright green line with arrowheads is superimposed on a photographic image of the southern end of the property, the green line “existing stream” (Stream 11) appears to depart from the normal tree-lined channel west of the Prop Detention Basin south of the proposed Building 1B and cut across two square areas, then back toward the tree-line channel until it goes back into its proper location near Stream 12. When viewing a satellite image from Google Earth of this property, it appears that the maps in question have incorrectly located that section of Stream 11.
 - **Response:** *Stream alignment has since been updated. Alignment now better replicates the drainage pattern shown on the geo image.*

- **Comment:** Appendix A – Social and Economic Justification for Stream Relocation Table has the same numbers for the Minimal Impact and No Impact Alternatives. Please correct or explain.
 - **Response:** *The Social and Economic Justification Table has been revised accordingly to depict accurate estimates based on each of the three (3) alternative site designs.*

- **Comment:** Please correct the discrepancy: on page 15, the Minimal Impact Alternative is stated to create 100 fewer temporary jobs and 300 fewer permanent jobs vs. the Preferred Alternative; yet in Appendix A these figures seem to be reversed.
 - **Response:** *The temporary/permanent job discrepancy has been corrected.*

- **Comment:** Need to better explain why so many piped sections are proposed along the relocated streams, thus fragmenting them. While it is understood that such sections may be needed for the proposed utility and roadway crossings, lack of an exhibit showing the proposed development plan superimposed over the stream mitigation plan (Preferred Alternative?) makes it hard to ascertain the need. Some language addressing such a need would also be desirable within the mitigation plan narrative.
 - **Response:** *The crossings are required for the development or for existing utilities.*
- **Comment:** Please explain the meaning of the multiple “temporary diversion stations”, how such diversions will be achieved/function, and their anticipated duration.
 - **Response:** *Temporary diversion stations are for the purpose of ensuring that runoff is delineated into the stream corridors and not offsite.*
- **Comment:** Please explain the double black lines on the top of bank in the Stream Restoration plans (Appendix F).
 - **Response:** *Drafting of stream has been updated.*
- **Comment:** Floodplain widths should target 5 times bankfull channel width, minimum. In isolated locations, narrower widths (between 3 and 5 times bankfull) are acceptable to accommodate physical constraints.
 - **Response:** *Per the Ohio EPA Rainwater and Land Development, 2006, the bare minimum target for floodplain widths is 3 times bankfull as documented in Appendix 7. The updated design meets the 5 times bankfull minimum for most of stream A which has a short segment that is 4.7 times bankfull. Reach B is all over 5 times bankfull.*

- **Comment:** Provide an explanation why the proposed natural channel design (what appears to be a two stage rock-lined channel) was chosen vs. the self-forming channel technique. Please see https://engineering.purdue.edu/watersheds/webinars/IWLA2011/DitchDesign/Self-forming%20streams%20PURDUE_mecklenburg.pdf and <https://ohiowatersheds.osu.edu/resources/stream-systems/two-stage-ditch-symposium/self-forming-streams>.
 - **Response:** *Self-forming channel techniques rely on erosion and deposition over time to form morphological features. Given the urban environment this may be problematic as excessive aggradation or degradation may result in loss of capacity or instabilities. This also makes it difficult to quantify actual stream length for permitting purposes. The natural channel design approach that is proposed includes the bankfull channel within a larger valley to include constructed geomorphic elements to address geomorphic and hydraulic functions. It is not a rock-lined channel although there are some riffles designs with a range of rock sizes to provide grade control and habitat diversity. Some rip rap toe protection may be necessary in areas where high near bank stress may be encountered given the urban nature of the project; however, it is not the design intent to line all of the channel bed or banks with rock.*
- **Comment:** Proposed contours (and more existing contours) need to be labeled on the mitigation wetland plan view (Sheet EC7.0).
 - **Response:** *Proposed and existing contours labeled.*
- **Comment:** Contours along the stream also need to be labeled so the elevations of the wetland in comparison to those of the stream and floodplain can be understood.
 - **Response:** *Additional contour labels added.*
- **Comment:** Maximum water depths for the impacted wetlands were reported to be less than 0.4 meters (15.7 inches) whereas the mitigation wetland appears to have depths of approximately 6 feet. Proposed wetland depths should more closely match those of existing wetlands in order to provide for similar functions.
 - **Response:** *Wetland grading has been revised.*
- **Comment:** Existing wetlands that are to be impacted appear to be relatively shallow with gradual side slopes. Side slopes on the mitigation wetland should be more gradual (15:1 or flatter) to replace functions lost and establish a healthy shallow littoral zone.
 - **Response:** *Side slopes reduced to 15:1 max grade.*

- **Comment:** The vernal pool detail on Sheet EC6 does not appear to align with the grading (slopes and depths) of the wetland on Sheet EC7.0 which needs to be corrected.
 - **Response:** *Vernal pool detail updated..*
- **Comment:** The existing wetlands appear to include coarse woody debris which should be incorporated into the mitigation wetland as well.
 - **Response:** *Mitigation wetland coverage updated.*
- **Comment:** Is the deeper square area in the mitigation wetland intended to be open water? If so, is an open water area necessary or appropriate for this mitigation wetland? It does not appear that impacted wetlands contain unvegetated open water areas.
 - **Response:** *Open water areas removed.*
- **Comment:** Clarify what criteria are being used to determine what portions of the mitigation wetland will be open water. There is concern that achieving wetland conditions over a 6-foot vertical distance will not be successful and that some areas proposed as wetland will be upland or open water instead.
 - **Response:** *Open water areas removed.*
- **Comment:** It appears that encapsulated (enclosed) sections of the proposed relocated streams (1,260 l.f.) include providing a 30 ft.-wide SCPZ for such sections, which are included in the total mitigation SCPZ acreage. Providing SCPZ over an enclosed stream, considering that such enclosed stream sections seem to be provided for access/drive purposes, would only be acceptable as part of the plan to provide a favorable stream habitat along the entire relocated stream, including the enclosed sections. The proposed conservation easement would need to continue through such enclosed sections, but only within the culvert width (the SCPZ will retain its normal width along such sections). Such enclosed stream crossings must include appropriately enlarged culverts (three-sided arches or similar), and appropriately designed stream bed within the culvert. Provide information showing how the sections of the relocated and restored stream that are to be enclosed will maintain favorable stream habitat.
 - **Response:** *Conservation easement stays in the pipe. Stream Corridor Protection Zone extended through piped sections.*
- **Comment:** Clarify the length of proposed (relocated) stream channel. The Variance Application states 7,722, the Relocation Plans include a table on Sheets EC3.-EC3.5 (mistitled Existing Stream Table) that totals 7,731 feet, and the stationing on the plans totals approximately 7,557 feet.
 - **Response:** *Stream lengths have been updated to be consistent across sets.*

- **Comment:** The upstream extent of relocated Stream B is mislabeled as STA 1+85.01 and as STA 27+75.71 in various places (the actual value appears to be 25+75.71).
 - **Response:** *Stationing has been updated.*
- **Comment:** The upstream extent of relocated Stream A is mislabeled as STA 60+87.37 in various places on the plans (actual value appears to be 61+94.45).
 - **Response:** *Stationing has been updated.*
- **Comment:** The Log Cross Vane and Log and Rock Riffle details (Sheet EC6.0) do not appear to be referenced on the plan views. Where are these to be installed?
 - **Response:** *Design has been updated, relevant details updated accordingly.*
- **Comment:** As this proposed development is not a City project and is not funded with public funds, it is not subject to Executive Order 2015-01 for tree replacements. However, mitigation for the lost stream/SCPZ functions must be provided in accordance with the SWDM requirements.
 - **Response:** *Note executive order 2015-01 has been removed. Mitigation for lost stream/SCPZ functions is provided and noted on reforestation plans*
- **Comment:** Appendix F, Exhibit EC6.3: Why is sod proposed to be used in SCPZ? It is typically non-native with shallow roots.
 - **Response:** *Seed table noting sod on sheet ec6.3 has been removed. Alternative seeding mix has been provided on reforestation plans*
- **Comment:** The original Maps EC2.0 and EC2.1 had a legend for the limit of trees to be removed but because Stream Stats did not calculate the correct drainage area the SCPZ widths and the limits of tree removal were incorrect. These should be redrawn and the tree assessment for removal be updated to be in compliance.
 - **Response:** *The limits of the tree removal have been review and are within the updated SCPZ widths.*
- **Comment:** Please provide a summary table of tree replacement specimens by species and size.
 - **Response:** *Table added to sheet noting tree replacement information in more detail (qty, family, genus, species, size at install, location). Please note some of the information is in progress.*

- **Comment:** Will balled and burlapped trees be planted in the new stream floodplain (as shown on EC4.4) as part of the 12.43 acre reforestation plan? If not, please explain the size of the planting materials.
 - **Response:** Yes, 1" cal min ball and burlap trees will be planted as part of the reforestation plan.
- **Comment:** The Seeding Chart on EC6.3 seems generic; not every item is to be used, it seems.
 - **Response:** Chart removed from EC6.3.

Should you have any questions or further concerns, please do not hesitate to contact me.

Regards,



Justin M. Muller, P.E.
Kimley-Horn and Associates, Inc.
Ph: (614) 454-6696