

**OHIO EPA ALTERNATIVES ANALYSIS
WASHINGTON GLEN RESIDENTIAL DEVELOPMENT PROJECT
WASHINGTON TOWNSHIP, MONTGOMERY COUNTY, OHIO
OCTOBER 2014**

1 REGULATORY BACKGROUND INFORMATION

REGULATORY REQUIREMENTS

This Alternatives Analysis is part of the Ohio Environmental Protection Agency's (Ohio EPA) 401 Water Quality Certification application that Centerville Development Group of New Bremen, Ohio, has completed for the residential housing development project that Centerville Development Group plans to undertake on the Washington Glen property, located on Yankee Street in Washington Township, Montgomery County, Ohio.

PERMITTING REQUIREMENTS

This project will require a Clean Water Act Section 401 Water Quality Certification from the Ohio EPA.

Centerville Development Group is also applying for a federal Clean Water Act Section 404 permit from the Huntington, West Virginia, district office of the U. S. Army Corps of Engineers (COE) for this project.

ANTIDegradation Rule

In order for the Ohio EPA to issue a Section 401 certification, Centerville Development Group understands that this project must comply with Ohio's Water Quality Standards (OAC 3745-1) and not potentially result in an adverse long-term or short-term impact on water quality. Included in the Water Quality Standards is the Antidegradation Rule (OAC Rule 3745-1-05), effective October 1, 1996, revised October 1997 and May 1998. This Rule includes additional application requirements and public participation procedures. The additional application requirements are presented in Part 10 of the Ohio EPA Section 401 application.

INFORMATION REQUEST FROM PART 10 of SECTION 401 APPLICATION

Centerville Development Group herein provides the information requested in Part 10 of the Ohio EPA Section 401 application. Centerville Development Group understands that this information will be used to evaluate the project for certification and is a matter of public record. If the Director of the Ohio EPA determines that the application lacks information necessary to determine whether the applicant has demonstrated the criteria set forth in OAC Rule 3745-32-05(A) and OAC Chapter 3745-1, Centerville Development Group further understands that the Ohio EPA will inform Centerville Development Group in writing, of the additional information that must be submitted. Centerville Development Group also understands that its application will not be accepted until the application is considered complete by the Section 401 Coordinator.

2 SUMMARY OF ALTERNATIVES FOR THE WASHINGTON GLEN PROPERTY

ALTERNATIVES FOR PROJECT

The Antidegradation Rule requires a Section 401 Certification application to include a report that evaluates three alternative designs for the proposed project, including:

- Alternative A: The preferred design for the Washington Glen property and the proposed mitigative techniques;
- Alternative B: A minimal degradation alternative (scaled-down version of the project) for the Washington Glen property and proposed mitigative techniques; and
- Alternative C: A non-degradation alternative for the Washington Glen property (project resulting in avoidance of all waters of the state)

ALTERNATIVE A: “PREFERRED” DESIGN WITH MAXIMUM IMPACT

Proposed Design: The preferred design for the Washington Glen property includes the following:

Develop 261 single residential structures; with supporting features, including streets, utilities, and a stormwater system on the 84 acres.

A total of 100% of the wetlands on the property will be impacted with this alternative. A combined total of 4.46 acres of wetlands would be impacted for this design alternative.

Proposed Mitigation: Centerville Development Group proposes to pay into The Nature Conservancy’s in-lieu fee mitigation program for the loss of the 4.46 acres of wetlands.

Feasibility: This alternative is practical and possible for this property.

ALTERNATIVE B: DESIGN WITH MINIMAL IMPACT

Proposed Design: The minimal impact design for the Washington Glen property includes the following:

Develop 228 single residential structures; with supporting features, including streets, utilities, and a stormwater system on the 84 acres.

A total of 30% of the 4.46 acres wetlands on the property will be impacted with this alternative. A combined total of 1.3 acres of wetlands would be impacted for this design alternative.

Proposed Mitigation: Centerville Development Group proposes to pay into The Nature Conservancy’s in-lieu fee mitigation program for the loss of the wetlands.

Feasibility: This alternative is possible for this property, but not economically feasible.

ALTERNATIVE C: DESIGN WITH NO IMPACT

Proposed Design: The no impact design for the Washington Glen property includes the following:

A total of 221 houses could be built for this alternative.

Proposed Mitigation: No mitigation would be required because this is a no impact design.

Feasibility: This alternative is not practical or economically possible for this property.

SUMMARY OF PRACTICALITY OF ALTERNATIVES

Alternative A is practical, possible, and economically feasible for the Washington Glen property. Centerville Development Group, is not interested in pursuing the development of this property according to Alternatives B or C. Neither one of these alternatives is economically feasible.

3 INFORMATION RELATIVE TO THE ANTIDegradation RULE**Part 10a**

Provide a detailed description of any construction work, fill or other structures to occur or to be placed in or near the surface water. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water.

Response to 10a Approximately 4.46 acres of wetlands are located on the Washington Glen property. The preferred impact Washington Glen design plan (Alternative A) calls for impacts to the following on-site wetlands:

HYDROLOGICAL FEATURES ON THE WASHINGTON GLEN PROPERTY, WASHINGTON TOWNSHIP, MONTGOMERY COUNTY, OHIO		
WETLAND	AREA (acres)	WETLAND TYPE
A	0.092	Mixed herbaceous
B	0.14	Forested and mixed herbaceous
C	0.23	Mixed herbaceous
D	2.177	Forested, mixed herbaceous, open water / aquatic bed
E	1.649	Forested, mixed herbaceous, open water / aquatic bed
F	0.057	Mixed herbaceous
G	0.061	Mixed herbaceous
H	0.053	Mixed herbaceous
TOTAL	4.459	

The natural materials used to fill these wetlands will consist of clean soils and subsoils derived from the initial on-site grading process. The overall extent of the grading on the property will be relatively minor, as noted in the below listing of the average thickness of fill

material that will have to be placed in the wetlands when the site is graded. The majority of these wetlands are located in relatively shallow depressional areas on the property, formed by the blockage of on-site surface water drainageways by such items as farm roads, fence rows, excavated materials from farm ponds, etc.

AMOUNT OF FILL MATERIAL TO BE PLACED IN THE STREAMS FOR ALTERNATIVE A (PREFERRED DESIGN) FOR WASHINGTON GLEN			
STREAM	IMPACT AREA (square feet)	AVERAGE. DEPTH OF FILL (feet)	VOLUME OF FILL ABOVE OHWM (cubic yds)
A	4,000	1	148
B	6,100	1	226
C	10,000	2	741
D	94,800	1	3511
E	71,800	1	266
F	2,500	1	93
G	2,700	1	100
H	2,300	2	85
TOTAL	199,200 (4.46 acre)	---	5,170 cubic yards

Part 10b

Describe the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species (include written comments from Ohio Department of Natural Resources and U.S. Fish and Wildlife Service), important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation.

Response to 10b Overall long-term water quality will not be lowered significantly as a result of the development of the Washington Glen property. It is acknowledged that, during the construction phase of the development project, a minimal amount of sediment potentially could escape into the one stream that is located along the northern half of the western edge of the property as is typical of most large-scale development projects; however, the construction-phase stormwater management and erosion control program will be designed to minimize any such potential issues.

The post-construction stormwater management system will include approximately 1.6 acres of stormwater detention basin area and approximately 3.4 acres of stormwater retention basin area in comparison to the 4.46 acres of wetlands currently on the property. All stormwater discharging from the new Washington Glen residential community will flow into and through these basins before being discharged into a natural stream.

No rare or endangered plant or animal species were found on the Washington Glen property

while conducting multiple field visits to the site. The majority of the property is used for row crop agriculture; with the fields having been planted in soy beans for many years. The one 17-acre section of the property that had been forested has been either clear cut or selectively cut about five years ago. The eight different wetland areas on the property are the result of human activities blocking surface water drainageways on the property. These wetlands collect stormwater runoff from the soy bean fields, including eroded sediment, fertilizers, pesticides, and herbicides.

Shagbark hickory trees (Indiana bat habitat) are located on the property. The majority of these trees are located in a narrow band of trees along the western property line. This area will not be disturbed during site development. Some number of smaller shagbark hickory trees are located in the 17-acre section of the property that had been selectively cut five years ago.

Commercial or recreational sport fish are not present on the Washington Glen property.

A total of eight different wetlands, totaling 4.46 acres, are present on the Washington Glen property. A thorough delineation of the on-site wetlands was conducted as part of this permitting process. No streams are present on the property. Several manmade drainage ditches are located on the property. The drainage ditches carry runoff from the farm fields to several of the on-site wetlands.

Part 10c

Include a discussion of the technical feasibility, cost effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation).

Response to 10c: Alternatives B and C are not financially feasible for the Washington Glen property. The technical feasibility of Alternatives B and C is highly questionable. Alternatives B and C also would allow the continuation of the manmade wetlands either partially or totally intact, perpetuating the continued poor land management practices now in place with excessive erosion of the property, and an intense breeding ground for mosquitoes in the low grade wetland areas.

This property is currently surrounded on three sides by single family housing with many children. A daycare center is located on the fourth side of the property. Disease carrying mosquitoes have become a growing problem in the State of Ohio with earlier springs, later falls, and milder winters. The proposed residential development for this property will be made up of roughly a 50/50 split between single family housing typically sold to young families with children and senior adults whose immune systems are less robust than younger adults. The development of the Washington Glen property cannot be successfully completed with either Alternatives B or C. With both of these alternatives not possible, Washington Glen Communities, LLC has made the decision to undertake the alternative that will result in the successful completion of the project, i.e., Alternative A (100% mitigation of the wetland areas).

The following data table presents a hypothetical cost analysis for the three alternatives.

COST COMPARISON FOR THE THREE ALTERNATIVE DESIGNS FOR WASHINGTON GLEN RESIDENTIAL DEVELOPMENT PROJECT

COST COMPARISON FEATURES	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
	Preferred Design	Compromise Minimal Impact Design	No-Impact Design
# of Lots	261	228	221
Construction Cost	\$6,397,050	\$5,798,115	\$5,785,280
Ground Value	\$2,352,000	\$2,352,000	\$2,352,000
Soft Cost and Profit	\$8,710,848	\$8,777,155	\$8,768,598
Total	\$17,459,898	\$16,927,270	\$16,905,878
Development Cost Per Lot	\$66,800	\$74,250	\$76,500

The most cost effective lot layout is Alternative A, at \$66,800 per lot development cost. This layout, however, does result in the required mitigation of the wetland areas. Alternatives B and C are not feasible at development costs per lot noted above. This development plan calls for affordable homes starting in the mid-\$200,000 range. With lot prices normally being 25% of the total home cost, lot prices of \$76,500 would drive the starting home prices over \$300,000. The Alternative B design shows a developed lot cost of \$74,250 per lot which pushes the finished cost to nearly \$300,000. The Washington Glen Alternative A \$66,800 cost per lot compares well with a home price in the mid-\$200,000 range.

With the completion of Alternative A, the project will result in a net loss of 4.46 acres of wetlands.

Alternative A, the preferred design for the Washington Glen property, should result in no potential recurring operational or maintenance difficulties that could lead to increased surface water degradation, but will instead correct the current poor land management issues resulting in excessive soil erosion as well as the removal of a mosquito breeding ground from a heavily populated residential area.

Water that now collects in the wetland areas will be better managed by 100% collection in 3.4 acres of retention ponds that will offer habitat to migrating birds and other local wildlife in the area. Additionally, these pond areas will provide a level of recreational greenspace and activity areas for the residents while minimizing the worry and potential hazard of mosquito breeding areas.

Part 10d

For regional sewage collection and treatment facilities, include a discussion of the technical feasibility, cost effectiveness and availability, and long-range plans outlined in state or local water quality management planning documents and applicable facility planning documents.

Response to 10d: The Washington Glen property will not be used for a regional sewage collection and treatment facility. Sanitary wastes generated in the residential structures on the Washington Glen property will discharge to an already-existing local sanitary sewer system.

Part 10e

To the extent that information is available, list and describe any government and/or privately sponsored conservation projects that exist or may have been formed to specifically target improvement of water quality or enhancement of recreational opportunities on the affected water resource.

Response to 10e: Centerville Development Group is not aware of any government and/or privately sponsored conservation project that exists or that may be formed to specifically target improvement of water quality or enhancement of recreational opportunities in this specific area of the lower Great Miami River watershed, of which the Washington Glen property is part, that will be affected by the development of this property.

Part 10f

Provide an outline of the costs of water pollution controls associated with the proposed activity. This may include the cost of best management practices to be used during construction and operation of the project.

Response to 10f: The following water pollution controls and best management systems for stormwater management and erosion control practices have been designed into this project.

- Stormwater management and erosion control systems will be put in place during construction, including silt fences, mulch and/or earthen berms, temporary seeding, hay bales, inlet protection, temporary collection basins, diversion ditches, construction entrances, and other such management devices.
- The estimated cost for these materials, for their installation and maintenance, is estimated to be about \$150,000. The cost could be substantially higher or lower than this estimate. The final cost for stormwater management and erosion control ultimately depends on the weather conditions during the construction season. A dry construction season can substantially lower the cost; whereas a wet construction season can substantially increase the cost for this aspect of the site development.
- Stormwater generated on the Washington Glen property during the construction phases of the project will be directed to a series of temporary on-site sedimentation basins. The number and locations of these basins will change and will be placed when and where necessary to be effective in erosion control. The cost to construct these detention basins is included in the above-listed cost for the best management practices.
- The cost to construct the post-construction stormwater sewer system, including surface drainageways and an underground piping system is estimated at \$300,000.

- Upon completion of the residential development, water management on the site will be much improved, with a reduction in soil erosion, improved water collection and controlled release into the existing natural waterways.
- Existing mosquito breeding areas in the on-site wetlands will be greatly reduced, which will have a positive impact on human health in the surrounding area. The creation of clean, aerated retention ponds will be a benefit to the surrounding communities, providing aesthetically pleasing recreational greenspace. Additionally, these ponds will also provide stop over areas for migrating birds and habitat for fish and other aquatic wildlife.

Part 10g

Describe any impacts on human health and the overall quality and value of the water resource.

Response to 10g: Centerville Development Group foresees minimal adverse impacts on human health and the overall quality and value of the water resource resulting from the development of the Washington Glen property. The elimination of mosquito breeding grounds potentially will provide a positive health benefit to the surrounding residential communities.

No significant quantities of any materials, chemicals, or other substances of environmental or ecological or health concerns are planned for release into the environment on this property that should adversely affect human health. The improved land management and the removal of this land from agricultural use should reduce the sediment and chemical load currently entering the surrounding stream systems from this property.

The work associated with the removal of the on-site wetlands will result in a short-term localized impact to local watershed. These wetlands currently function primarily as filters for the sheetflow and channelized stormwater discharge from the surrounding agricultural fields, before this runoff leaves the property and enters the nearby natural streams. The removal of these wetlands and their replacement with a post-construction stormwater management system that includes approximately 1.6 acres of stormwater detention basins and approximately 3.4 acres of stormwater retention basins should not create a long-term negative impact.

Part 10h

Describe and provide an estimate of the important social and economic benefits to be realized through this project. Include the number and types of jobs created and tax revenues generated and a brief discussion on the condition of the local economy.

Response to 10h: The Washington Glen residential development project will provide important social and economic benefits to southern Montgomery County area. Following is a listing of the numbers and types of jobs that will be created, the tax revenues generated, and other financial considerations.

Local Economy: The overall business environment in the metropolitan sectors of

southwest Ohio has remained sufficiently active to continue to attract business to this region. The Washington Glen residential development project is in a conveniently located area south of the Greater Dayton metropolitan area, within 2.3 miles of a major highway (Interstate 75) that provides easy access to educational and recreational facilities. Residual rural undeveloped properties, such as Washington Glen, are found throughout the outer fringe of the Greater Dayton metropolitan area. These still-remaining undeveloped properties are being purchased and developed as residential communities.

The Washington Glen project will consist of a total of 261 single family houses at an average value in the mid- to-high \$200,000 range. The project has support from the Washington Township Trustees, as well as the Washington Township Planning Commission. The economic development dollars generated will be approximately \$71,775,000. Annual property tax revenue to the community and school district will be approximately \$1,900,000. It is estimated that the project will bring 300 to 400 much needed home building jobs to the area. These additional homes in this area of will generate much needed tax revenue for Montgomery County and the southern Greater Dayton metropolitan area.

Part 10i

Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project. Include the effect on commercial and recreational use of the water resource, including effects of lower water quality on recreation, tourism, aesthetics, or other use and enjoyment by humans.

Response to Part 10i: Centerville Development Group foresees no loss of important social or economic benefits as a result of this project.

This property is not used by the local population for social activities. Neighbors from adjacent residential properties do not use the Washington Glen property for recreational activities, since this land is private property and is primarily used for row crop agriculture.

No direct access is available to the property from nearby public roadways, such that the fields, wetlands, and woods on the property are not available to the local population. No evidence was found on the property that indicates the local population or other individuals use this property for hiking, cycling, wildlife watching, fishing, hunting, swimming, boating, or any other outdoor activity.

Part 10j

Describe environmental benefits, including water quality, lost and gained as a result of this project. Include the effects on the aquatic life, wildlife, threatened or endangered species.

Response to Part 10j: Centerville Development Group foresees no significant adverse change in water quality as a result of this project. Centerville Development Group also foresees no significant adverse effect on aquatic life, wildlife, threatened or endangered species as a result of this project. Deer, other smaller mammals, birds, and other such wildlife will be displaced during the construction phase of the project. As seen essentially everywhere in Southwest Ohio, however, these same animals are also residents of the local

residential communities.

Centerville Development Group is working in cooperation with the Montgomery County soil and water conservation district to develop a long-term stormwater management plan, such that the development of the Washington Glen property will not have an adverse effect on the various private and public properties in the downgradient portions of the watershed in which the Washington Glen property is located. The post-construction stormwater management system on the Washington Glen property is designed to reduce the post development flow from the property to a level less than what currently discharges from the site; thereby, helping to reduce the volume of peak flow during storm events. The post-construction stormwater management system will include approximately 1.6 acres of stormwater detention basin area and approximately 3.4 acres of stormwater retention basin area.

Part 10k

Describe proposed mitigation techniques (except for the Non-Degradation Alternative):

Response to Part 10k: Centerville Development Group proposes the following on-site stream mitigation to compensate for the loss of the 4.46 acres of wetlands for Alternative A.

Centerville Development Group proposes to pay into The Nature Conservancy's in-lieu fee mitigation program for the loss of the 4.46 acres of wetlands.