

CAESAR CREEK MARINA – PROJECT NARRATIVE

BOX 8a. DESCRIBE THE OVERALL ACTIVITY.

The Ohio Department of Natural Resources (ODNR) proposes to develop a 419 slip recreational marina at Caesar Creek State Park. The park is leased by the State of Ohio from the U.S. Army Corps of Engineers (USACE), which created the lake by constructing a dam across Caesar Creek. The marina would be located on the north side of Caesar Creek Lake, just east of State Highway 73, in Massie Township, Warren County, Ohio.

Existing Conditions

The project area consists primarily of upland old fields with scattered young woody vegetation. The vast majority of the woody species surveyed include young white ash and honey locust. Other common species, though occurring much less frequently than white ash and honey locust, include common hackberry, boxelder, elm, silver maple, willows, black locust, and cottonwoods.

An 868-foot long straightened, unnamed tributary (ET1/ET2) runs along the northern edge of the project area and discharges into Caesar Creek Lake. An impounded pond used for youth fishing (Young Angler's Pond) occurs along the southern portion of the project area and discharges through a short, 110-foot long, unnamed tributary (ET3) into Caesar Creek Lake. Several low quality (category I and II), wet meadow or scrub/shrub wetlands are located along the aforementioned tributary, along the lake edge, or within a depressed area of the old field. The fishing pond and aforementioned wetlands total 1.495-acres. The ordinary high water mark of Caesar Creek Lake is 849.00' NGVD29 (848.25' NAVD88) below which are regulated Waters of the U.S. For wetland and stream identification numbers, please see Tab 7.

Existing infrastructure includes the vacated old State Highway 73 road along the north edge of the project area, and a road that wraps around the west side of the project area that connects to a parking lot for the Young Angler's Pond. Located adjacent to the parking lot is an ADA accessible fishing pier and floating patrol boathouse attached to the shore via a stiff arm. Utilities within the project area include electrical, water and sanitary which are located to the north of the site along the access road to the beach area. Electrical service is also provided to the floating patrol boathouse to the south of the project site, most likely along State Highway 73.

Proposed Conditions

This description of proposed conditions is based on the Minimal Degradation Alternative.

The proposed marina extends along 1,430-feet of the shoreline. Two floating wave attenuators are proposed to create an inner harbor for the proposed marina while minimizing impacts to wetland and water resources. The attenuators will be attached to anchors at the bottom of the lake consisting of concrete blocks or helical screws. The attenuators and docks will be designed to accommodate seasonal fluctuations in water levels.

The outer attenuator would extend from the north bank in an arc to the south where it would extend 700-feet into the lake at its farthest point. The inner attenuator would extend from the south bank in an arc to the north where it would extend 535-feet into the lake at its farthest point. The opening between the attenuators through which vessels would pass is 130-feet.

The docks and attenuators will have access at three locations, each with hinged and/or adjustable gangways that will allow for fluctuations in water levels. Access to the north attenuator will be via a 100-foot gangway. Access to the headwalk and south attenuator will be through two, 80-foot gangways with an adjustable, pile supported transition platform to maintain accessibility.

Other marina amenities include:

- A floating administration building;
- A floating fuel and sanitary pump-out facility;
- Wet berths ranging in size from 20 to 36-feet for seasonal and transient boaters;
- Dockside utilities at each double-well berth to provide electric and water to each slip greater than 26-feet;
- A new private boat launch ramp to be developed with a future private partner;
- 226 parking stalls upland;
- Stormwater quality managed through filtration zones (0.701-acres) both in the parking lots and throughout the site;

A number of park and habitat improvements are proposed including the following:

- 0.247-acres along the shore of the inner marina will be planted in emergent wetland vegetation for fish and wildlife habitat;
- Shoreline improvements including the creation of emergent wetland edge habitat, revetments, and stacked stone to provide improved fishing access;
- 0.419-acres of fish spawning beds consisting of mixed sand, gravel and structure (boulders, rock piles, logs, and etc.) will be created at elevations 842.75' NGVD29 (842.00' NAVD88) to 843.75' NGVD29 (843.00' NAVD88);
- A total of 486-linear feet of straightened stream channel will be restored to 1,035-linear feet using natural channel design techniques;
- A vast majority of upland green spaces restored to native plant communities;
- Pedestrian trails, picnic tables, fishing access, and a future playground.

A more detailed description of proposed improvements is included Caesar Creek Marina Schematic Design Report (Tab 4), and in the attached Construction Drawings (Tab 5).

BOX 8b. PURPOSE: DESCRIBE THE PURPOSE, NEED AND INTENDED USE OF THE ACTIVITY.

The Ohio Department of Natural Resources (ODNR) proposes to develop a recreational marina. Project goals include:

- Creating a well-designed, attractive and sustainable marina that provides a range of economic, social, and ecological benefits;
- Use of public investment as a tool to attract and encourage private investment that will help to maintain, manage, and construct planned improvements;
- Expand the range of recreational opportunities available and develop marina and park facilities that support a broad range of users.

The United States Army Corp of Engineers (USACE) has anticipated the need for a marina at Caesar Creek State Park for nearly 20-years as supported by the following:

- The USACE included the development of a marina at Caesar Creek Lake since a Master Plan study was approved in 1994;
- A Caesar Creek State Park Marina Feasibility Study (Economic Research Associates, 2008) concluded there was a market demand for a 300 to 320 slip marina at Caesar Creek State Park;
- A report completed by Jones-Stuckey, Ltd. in 2010 reviewed five alternative marina sites on Caesar Creek Lake and recommended the proposed site as a viable alternative;
- A Market Analysis of the Proposed Caesar Creek Marina (TAI Realty Advisors, 2012) reviewed the proposed Caesar Creek Marina in the context of the market area, boating in southeast Ohio, comparable marina facilities, and demand characteristics. In summary, the study concluded:
 - There is a large, under-served, existing population of boaters in proximity to Caesar Creek Lake;
 - Boating-related visitors at Caesar Creek Lake increased more than 50% between 2006 and 2011;
 - The proposed marina will draw visitors from Clinton, Greene, Warren and Montgomery counties, as well as 1,700 additional boats registered outside of the market area. Approximately 13,000 boats within the market area could frequently use Caesar Creek;
 - Current market conditions support the absorption of up to 390 slips at the proposed marina to occupancy levels of up to 95% within three to four years of opening.
- Work completed during 2012 by SmithGroupJJR suggests that providing up to 419 slips will generate income that will make the project more economically sustainable.

While developing a marina is the primary purpose, need, and use, conversations with ODNR fisheries biologists indicate that while Caesar Creek Lake is a popular fishing lake, fish habitat and opportunities near the proposed marina are poor. The proposed project is designed to improve fish habitat and fishing opportunities by creating emergent wetland habitat, fish spawning habitat, structures for fish cover, and public fishing access to the improved fish habitat.

8c. DISCHARGE OF DREDGED OR FILL MATERIAL: DESCRIBE TYPE, QUANTITY OF DREDGED MATERIAL (IN CUBIC YARDS), AND QUANTITY OF FILL MATERIAL (IN CUBIC YARDS).

The description of dredged and fill materials is based on the Minimal Degradation Alternative. Please see Tab 5, drawings P007 through P012 for sections of the following proposed areas.

Fill Materials

1,930 cubic yards of fill are proposed to be placed in wetlands or Waters of the U.S. (lake below ordinary high water mark of 849.00' NGVD29 (848.25' NAVD88)) as described below:

- Rock revetment for shoreline protection: 350 cubic yards
- Create 0.232-acres of emergent planting shelves at elevations 848.50' NGVD29 (847.75' NAVD88) to 849.00' NGVD29 (848.25' NAVD88), See details on drawings P 012 of Tab 5.
 - 60 cubic yards of rock revetment for establishing emergent planting shelves
 - 140 cubic yards of topsoil
 - 110 cubic yards of clean fill
- Create 0.188-acres of fish spawning shelves at elevations 841.75' NGVD29 (841.00' NAVD88) to 842.75' NGVD29 (842.00' NAVD88), See details on drawings P 012 of Tab 5.
 - 180 cubic yards of clean fill
 - 150 cubic yards of sand/gravel spawning substrate
- Fill areas necessary to meet existing lake bottom elevations below the emergent wetland and fish spawning areas totals 0.293-acres.
 - 560 cubic yards of clean fill
- Proposed fill areas below the existing ordinary high water mark that will be upland areas to accommodate the marina design in the proposed condition total 0.180-acres.
 - 450 cubic yards of clean fill
- Create habitat structures for fish in spawning beds and lake bottom areas
 - 6 salvaged trees (without branches/with root wads)
 - 400 linear feet of logs
 - 230 cubic yards of cobble

Dredged Materials

30,340 cubic yards of clean silt, soil, sand, gravel and cobble below the ordinary high water mark of 849.00' NGVD29 (848.25' NAVD88) is proposed to be dredged to accommodate acceptable depths in the marina for boat traffic.

9. WATERBODY AND LOCATION OF WATERBODY WHERE ACTIVITY EXISTS OR IS PROPOSED, OR LOCATION IN RELATION TO A STREAM, LAKE, WETLAND, WELLHEAD OR WATER INTAKE (IF KNOWN). INDICATE THE DISTANCE TO, AND THE NAME OF, ANY RECEIVING STREAM, IF APPROPRIATE.

Streams

60-linear feet of the unnamed tributary (ET2) along the north project limits would be impacted as part of a road crossing in which the tributary would be conveyed through a new concrete arch pipe culvert under the road.

376-linear feet of the same unnamed tributary (ET2) downstream of the culvert would be reconstructed and restored to a 405-linear feet natural channel (PT1) that meanders and includes riffles, pools, bankfull bench, and vernal pools in the overbank areas.

The Young Angler's Pond is impounded via an earthen dam at its southeast perimeter. The existing earthen dam will be replaced with a new weir structure. The outlet structure will be a stoplog/riser type system that will allow for easier and more accurate adjustment of the pond pool elevation. There is no anticipated dredging of the Young Angler's Pond; however, minimal localized dredging may occur in order to construct the new outlet structure. The outlet structure will be relocated at the northeast corner of the pond to protect the dam and create a more stable stream channel outfall to the lake. It is estimated that the new outlet control structure will be located 6-feet from the existing bank of the Young Angler's Pond. This concrete structure and new stream meander will be constructed and vegetation established prior to completion of the connection to the youth pond. To complete the connection, a small area will be dredged to connect the pond to the structure. All dredged materials will be dewatered and used for grading and fill near the outlet structure and new stream corridor. Quantities are described below:

- Dredge area
 - 90 square feet
- Dredge volume
 - 10 cubic yards

110-linear feet of the unnamed tributary (ET3) from which the Young Angler's Pond discharges would be reconstructed and restored to a natural channel that meanders and includes riffles, pools, a bankfull bench, and vernal pools in the overbank areas.

Wetlands

Four non-forested wetlands totaling 0.174-acres located along the bank of the lake would be permanently impacted. These wetlands are identified in the wetland delineation report (Tab 7) as W5a (0.037-acres), W5b (0.033-acres), W5c (0.044-acres), and W5d (0.060-acres).

Other Water Bodies

The areas of fill below the ordinary high water mark described in Question 8c total 1.062-acres of non-wetland Waters of the U.S. (Caesar Creek Lake below ordinary high water mark of 849.00' NGVD29 (848.25' NAVD88)).

10. TO ADDRESS THE REQUIREMENTS OF THE ANTIDegradation Rule, YOUR APPLICATION MUST INCLUDE A REPORT EVALUATING THE PREFERRED DESIGN, MINIMAL DEGRADATION ALTERNATIVE, AND NON-DEGRADATION ALTERNATIVE.

Construction drawings of the Preferred Design and the Minimal Degradation Alternative are included under Tab 5. As this is a water-dependent project, the Non-Degradation Alternative is no-build.

10a) DETAILED DESCRIPTION OF ALTERNATIVES.

Minimal Degradation Alternative

Design

The ODNR proposes to create a protected marina by using floating wave attenuators for wave protection, and by dredging the inner harbor for boat access. Attenuators serve as floating breakwaters and have baffles on each side extending approximately 2-3 feet below water that limit wave transmission. In addition to stilling water in the harbor, the attenuators would provide public access for fishing.

The surface deck of the proposed attenuators is approximately 12-feet wide. Low-level lighting will be installed along the length of the attenuators and navigational aids will be installed at the entrance to the marina.

The outer attenuator would extend from the north bank in an arc to the south where it would extend 700-feet into the lake at its farthest point. The inner attenuator would extend from the south bank in an arc to the north where it would extend 535-feet into the lake at its farthest point. The opening between the attenuators through which vessels would pass is 130-feet.

The proposed attenuators will be attached to concrete blocks or helical screw anchors at the bottom of the lake. The attenuators and docks will be designed to accommodate seasonal fluctuations in water levels.

The docks and attenuators will have access at three locations, each with hinged and/or adjustable gangways that will allow for fluctuations in water levels. Access to the north attenuator will be via a 100-foot gangway. Access to the headwalk and south attenuator will be through two, 80-foot gangways with an adjustable, pile supported transition platform to maintain accessibility. The gangways will be a minimum of 5-feet wide (clear width), and will comply with the Americans with Disabilities Act (ADA).

The gangways will be constructed of aluminum framing. If budget permits, wood cladding and decking material may be used.

A fuel dock with two dual dispensing units will be located at the end of the main headwalk near the marina entry channel. The proposed dock is 12-feet wide and 80-feet long, and would accommodate up to four boats. A pre-fabricated fuel attendant building will be located at the end of the fuel dock and contain spill containment equipment.

Immediately adjacent to the fuel dock is a proposed sanitary pumpout with two hose stands.

The slips are divided into two marina basins organized around a central headwalk. The basins could accommodate up to 419 wet berths ranging in size from 20 to 36-feet. The proposed floating docks will be surfaced with either concrete pavers, wood or a composite timber decking material with poly-encapsulated floats to prevent absorption of water and deterioration. Head piers will be 8-feet wide, and finger piers will be 3 to 4-feet wide depending on slip length.

Dockside utilities will be located at each double-well berth, and will provide electrical and water service to each slip longer than 26-feet.

A new private boat launch ramp is proposed to be developed with a future private partner and is proposed to be located on the south side of the project site.

Proposed improvements will affect approximately 2,000-linear feet of shoreline. Four wetlands totaling 0.174-acres would be permanently impacted. The proposed design creates a variety of edge treatments to address observed scour at elevations 848.75' NGVD29 (848.00' NAVD88) to 849.75' NGVD29 (849.00' NAVD88), and to accommodate park users and wildlife.

Along the shore of the inner marina, 0.247-acres will be planted in emergent wetland vegetation for fish and wildlife habitat. Stacked stone or riprap armor will be placed along 2,000-linear feet of the shoreline to provide improved fishing access, and to stabilize the banks. Beds (0.419-acres) consisting of mixed sand, gravel and structure (boulders, rock piles, logs, etc.) will be created for fish spawning at elevations 842.75' NGVD29 (842.00' NAVD88) to 843.75' NGVD29 (843.00' NAVD88).

A new entry road that follows the footprint of old State Highway 73 is proposed to cross the northerly unnamed tributary (ET1/ET2) over a culvert. The culvert will be designed with a natural bottom to maintain base flows in the tributary, and to accommodate bankfull flows. The abandoned State Highway 73 roadbed was chosen for the new entry road in order to minimize the development footprint, preserve natural areas, and reduce development costs.

Downstream of the proposed crossing described above, the remaining 376-linear feet of the same unnamed tributary (ET2) would be restored to a natural channel with meanders, riffles, pools, bankfull bench, and vernal pools in the overbank areas.

The Young Angler's Pond is impounded via an earthen broad-crested weir at its southeast perimeter. The existing earthen broad-crest weir on the dam will be replaced with a stoplog/riser control structure. The 110-linear foot southerly unnamed tributary (ET3) to which the Young Angler's Pond discharges would be reconstructed and restored as a 630-linear foot natural channel with meanders, riffles, pools, bankfull bench, and vernal pools in the overbank areas.

Description of Fill Material to be Placed

1,930 cubic yards of fill are proposed to be placed in wetlands or Waters of the U.S. (lake below ordinary high water mark of 849.00' NGVD29 (848.25' NAVD88)) as described below:

- Rock revetment for shoreline protection: 350 cubic yards
- Create 0.232-acres of emergent planting shelves at elevations 848.50' NGVD29 (847.75' NAVD88) to 849.00' NGVD29 (848.25' NAVD88), See details on drawings P 012 of Tab 5.
 - 60 cubic yards of rock revetment for establishing emergent planting shelves
 - 140 cubic yards of topsoil
 - 110 cubic yards of clean fill
- Create 0.188-acres of fish spawning shelves at elevations 841.75' NGVD29 (841.00' NAVD88) to 842.75' NGVD29 (842.00' NAVD88), See details on drawings P 012 of Tab 5.
 - 180 cubic yards of clean fill
 - 150 cubic yards of sand/gravel spawning substrate
- Fill areas necessary to meet existing lake bottom elevations below the emergent wetland and fish spawning areas totals 0.293-acres.
 - 560 cubic yards of clean fill
- Proposed fill areas below the existing ordinary high water mark that will be upland areas to accommodate the marina design in the proposed condition total 0.180-acres.
 - 450 cubic yards of clean fill
- Create habitat structures for fish in spawning beds and lake bottom areas
 - 6 salvaged trees (without branches/with root wads)
 - 400 linear feet of logs
 - 230 cubic yards of cobble

Description of Dredged Material to be Removed

30,340 cubic yards of clean silt, soil, sand, gravel and cobble below the ordinary high water mark of 849.00' NGVD29 (848.25' NAVD88) is proposed to be dredged to accommodate acceptable depths in the marina for boat traffic. All dredged material will be properly disposed of on or off site and in accordance with all applicable laws.

Construction Methods

All work is proposed to be constructed in the dry while the lake is drawn down to elevation 836.00' NGVD29 (835.25' NAVD88). Earth moving equipment such as excavators, skid movers, bull dozers and

dump trucks would be used. Spoil would be reused in upland areas or removed from the site. Proper erosion control best management practices would be employed to minimize impacts to surface waters.

Preferred Alternative

Design

The preferred design differs from the Minimum Degradation Alternative as follows:

1. The marina basin is excavated primarily out of upland areas to minimize impacts to non-wetland Waters of the U.S.; to provide land-based administration facilities; and to shorten the distance between the parking lot and the marina.
2. A large floating attenuator protects the marina basin, and docks which will be attached to concrete block or helical screw anchors at the bottom of the lake. The attenuators and docks will be designed to accommodate seasonal fluctuations in water levels
3. While impact to non-wetland Waters of the U.S. are minimized, all of the on-site wetlands, streams and pond are impacted.
4. The preferred design maximizes marina development to the exclusion of park and habitat improvements described in the Minimal Degradation Alternative.

Description of Fill Material to be Placed

The preferred design would fill the upstream portions of the 868-foot long stretch of the northerly unnamed tributary (ET1/ET2), as well as wetlands W7a (0.012-acres), with 180 cubic yards of compacted material to construct the northerly parking lot. The Young Angler's Pond (0.551-acres) would be filled with 80 cubic yards of material to create a stormwater quality wetland. The 110-foot unnamed tributary (ET3) would be fill in its entirety as well.

Description of Dredged Material to be Removed

The preferred design would eliminate wetlands W4 (0.146-acres), W5a (0.037-acres), W5b (0.033-acres), W5c (0.044-acres) and W5d (0.060-acres) as a part of the marina dredging. A total of 40,000 cubic yards of clean silt, soil, sand, gravel and cobble below the ordinary high water mark of 849.00' NGVD29 (848.25' NAVD88) would be dredged to accommodate acceptable depths in the marina for boat traffic. The unnamed tributary (ET3) discharging from the existing Young Angler's Pond would be also be excavated to accommodate the new marina basin. All dredged material will be properly disposed of on or off site and in accordance with all applicable laws. An additional 299,200 cubic yards of material would be excavated above the ordinary high water mark of 849.00' NGVD29 (848.25' NAVD88) to accommodate the proposed grading for this alternative.

A geotechnical investigation completed in 2011 indicates that substrate underlying wetlands and uplands consist of shallow soil, weathered rock, and underlying bedrock. The table below summarizes the volume of material proposed to be excavated from wetlands and streams within the project area:

Wetland or Stream	Quantity	Cubic Yards Proposed to be Excavated
W4	0.146-acres	4,400
W5b	0.033-acres	614
W5c	0.044-acres	837
W5d	0.060-acres	1,127
W7b	0.015-acres	424
Young Angler's Pond	0.551-acres	69
Northerly Tributary (ET1/ET2)	868-feet	32
Southerly Tributary (ET3)	110-feet	0

No maintenance dredging is anticipated.

Construction Methods

All work is proposed to be constructed in the dry while the lake is drawn down to elevation 836.00' NGVD29 (835.25' NAVD88). Earth moving equipment such as excavators, skid movers, bull dozers and dump trucks would be used. Spoil would be reused in upland areas or removed from the site. Proper erosion control best management practices would be employed to minimize impacts to surface waters.

Non-Degradation Alternative

Design

This is a water-dependent project. The Non-Degradation Alternative is no-build.

Description of Fill Material to be Placed

No fill would occur as this is a no-build alternative.

Description of Dredged Material to be Removed

Dredging would not occur as this is a no-build alternative.

Construction Methods

Construction would not occur as this is a no-build alternative.

10b) BIOLOGICAL AND PHYSICAL IMPACTS.

The project area consists primarily of upland old fields with scattered young woody vegetation. The vast majority of the woody species surveyed include young white ash and honey locust. Other common species, though occurring much less frequently than white ash and honey locust, include common hackberry, boxelder, elm, silver maple, willows, black locust, and cottonwoods.

An 868-foot long straightened, unnamed tributary (ET1/ET2) runs along the north edge of the project area and discharges into Caesar Creek Lake. An impounded pond used for youth fishing occurs along the

southern portion of the project area and discharges through a short, unnamed tributary (ET3) into Caesar Creek Lake. Several low quality (category I and II), wet meadow or scrub/shrub wetlands are located along the aforementioned tributary, along the lake edge, or within a depressed area of the old field. The fishing pond and aforementioned wetlands total 1.495-acres. The summer pool water elevation of Caesar Creek Lake is 849.00' NGVD29 (848.25' NAVD88) below which are regulated Waters of the U.S.

Minimal Degradation Alternative

We do not expect this project to adversely impact animal life, including sport and recreational fisheries. We expect the project to have a positive impact on animal life including sport and recreational fish. Personal observations and conversations with staff from the ODNR Division of Wildlife indicate that very little fish habitat currently exists around the proposed marina, and fishing opportunities are limited due to poor habitat as well as poor access to the lake from the shore.

The proposed project will create fish spawning and foraging habitat that currently does not exist and public access for anglers to these created shoreline habitats and deeper existing water habitats that will be accessible from the stabilized shoreline and floating attenuators.

The restored stream channels and created vernal pools will create new habitat for herpifauna and aquatic macroinvertebrates.

We do not expect this project to adversely impact plant life. Most of the existing plant life consists of cool season grasses, invasive shrubs such as European buckthorn and tartarian honeysuckle, and early successional woody species that colonize old fields such as boxelder, silver maple, ash, hackberry and red cedar. Most of the green space will be restored to wetland, prairie, upland, and lowland native woodlands. We expect the restored plant structure (grassland, open woodland, and closed woodland) and diversity to increase as a result of this project.

We do not expect this project to adversely impact rare, threatened or endangered plants and animals. Correspondence from the ODNR and U.S. Fish and Wildlife Service (See Tab 6) support our opinion that this project is not likely to impact rare, threatened or endangered plants or animals.

We do not expect this project to adversely impact aquatic habitat and physical characteristics of the water body and adjacent areas for reasons described above. We believe the project will have a positive impact on aquatic habitat and physical characteristics of the water body and adjacent areas due to the proposed emergent wetland and stream improvements.

We do not expect this project to adversely impact flow patterns of surface water. The two referenced tributaries (ET1/ET2) will remain open channels except for a short stretch (60-feet) that will be channeled in a culvert for a road crossing. Water in Caesar Creek Lake will continue to flow under the

floating attenuators and through the marina. All stormwater from the proposed upland improvements will be treated through bio filtration swales prior to discharging into the lake.

Wetlands

The table below describes the wetland type, category, area, number and area of each wetland impacted, and proximity/location of each wetland in relation to other surface waters. The Ohio Rapid Assessment Method for Wetlands (ORAM v 5.0) was used to derive wetland category. The wetland delineation report is attached as Tab 7. Note, wetlands W2, W3, W6, W8, and W9 are outside the proposed project limits.

Wetland	Acres	Type; Proximity	Category	Impacted?
W1	0.305	Emergent depression; overflows into lake	1	No
W4	0.146	Emergent depression; overflows into lake	Modified 2	No
W5a	0.037	Scrub/shrub riparian edge	1	Yes
W5b	0.033	Scrub/shrub riparian edge	Modified 2	Yes
W5c	0.044	Scrub/shrub riparian edge	Modified 2	Yes
W5d	0.060	Scrub/shrub riparian edge	Modified 2	Yes
W5e	0.283	Scrub/shrub riparian edge	1 or 2 (Gray Zone)	No
W7a	0.012	Wet meadow; riparian	1 or 2 (Gray Zone)	No
W7b	0.015	Wet meadow; riparian	Modified 2	No

Total wetlands on site: 0.770-acres

Total wetlands affected: 0.174-acres

Streams

Two unnamed tributaries (ET1/ET2 & ET3) occur on site. Neither tributary has a water quality designation per OAC 3745-1. Described below is each tributary’s name; type, age and width of vegetation adjacent to the watercourse; linear feet; linear feet to be impacted; and the proximity/location of each watercourse relative to other surface waters. The Ohio EPA Headwater Habitat Evaluation Index (HHEI, 2001) was used to derive the PHWH class.

The Northerly Unnamed Tributary (ET1/ET2) follows along the south side of Old State Highway 73 before discharging into Caesar Creek Lake.

- Name: Northerly Unnamed Tributary (ET1/ET2)
- Water Quality Designation: Not applicable
- Vegetation type: Immature Forest, Shrub or Old Field
- Vegetation width: Narrow (< 5m)
- Linear feet on site: 868-feet
- Proximity/Location: Discharges into Caesar Creek Lake
- HHEI score = 56. Please refer to the wetland delineation report (Tab 7) to reference HHEI forms.

- Impacts:
 - Culvert Crossing. A 60-foot long stretch would be impacted by a new road crossing through a culvert.
 - Restoration. A 405-foot long stretch immediately downstream from the culvert would be restored to a natural channel.

The Southerly Unnamed Tributary (ET3) begins at the outlet of the Young Angler’s Pond and discharges into Caesar Creek Lake.

- Name: Southerly Unnamed Tributary (ET3)
- Water Quality Designation: Not applicable
- Vegetation type: Immature Forest, Shrub or Old Field
- Vegetation width: Narrow (< 5m)
- Linear feet on site: 110-feet
- Proximity/Location: Discharges into Caesar Creek Lake
- HHEI score = 47. Please refer to the wetland delineation report (Tab 7) to reference HHEI forms.
- Impacts:
 - Restoration. The entire 110-foot long channel would be restored to a 630-foot long natural channel.

Lakes/Ponds

One 0.551-acres pond referred to in the wetland delineation report (Tab 7) as the Young Angler’s Pond is located at the southwest area of the site. The primary vegetation around the Young Angler’s Pond consists of mowed turf grass and young open woodland including green ash, boxelder and black willow. Buffer around the pond is very narrow (< 10 m). Adjacent land uses are moderately high (park). The pond is fed by runoff, which flows over an earthen broad-crested weir control structure, currently reinforced with sandbags into a 110-foot long unnamed tributary (ET3) which discharges into Caesar Creek Lake.

Present and Proposed Adjacent Land Uses

Present adjacent land uses consists of parkland. Proposed adjacent land uses will consist of parkland, and amenities associated with a marina.

Preferred Alternative

We do not expect this project to impact sport and recreational fisheries.

Since the entire site would be filled or excavated, the preferred project would eliminate existing upland plant and animal habitat.

We do not expect this project to adversely impact rare, threatened or endangered plants and animals. Correspondence from the ODNR and U.S. Fish and Wildlife Service (See Tab 6) support our opinion that this project is not likely to impact rare, threatened or endangered plants and animals.

We would expect a temporary impact to existing aquatic habitat and physical characteristics of the water body and adjacent areas during construction. Once construction is completed, we anticipate no adverse impacts.

Flow patterns would be highly altered. Existing stream channels would be filled and removed because of the marina construction.

Wetlands

The table below describes the wetland type, category, area, number and area of each wetland impacted, and proximity/location of each wetland in relation to other surface waters. The Ohio Rapid Assessment Method for Wetlands (ORAM v 5.0) was used to derive wetland category. The wetland delineation report is attached as Tab 7.

Wetland	Acres	Type; Proximity	Category	Impacted?
W1	0.305	Emergent depression; overflows into lake	1	No
W4	0.146	Emergent depression; overflows into lake	Modified 2	Yes
W5a	0.037	Scrub/shrub riparian edge	1	Yes
W5b	0.033	Scrub/shrub riparian edge	Modified 2	Yes
W5c	0.044	Scrub/shrub riparian edge	Modified 2	Yes
W5d	0.060	Scrub/shrub riparian edge	Modified 2	Yes
W5e	0.283	Scrub/shrub riparian edge	1 or 2 (Gray Zone)	Yes
W7a	0.012	Wet meadow; riparian	1 or 2 (Gray Zone)	Yes
W7b	0.015	Wet meadow; riparian	Modified 2	Yes

Total wetland on site: 0.770-acres

Total wetland affected: 0.630-acres

Streams

Both of the unnamed tributaries described under the Preferred Alternative would be completely impacted and removed.

Lakes/Ponds

The Young Angler’s Pond described in the Preferred Alternative would be completely impacted and removed.

Present and Proposed Adjacent Land Uses

Present adjacent land uses consists of parkland. Proposed adjacent land uses will consist of parkland, and amenities associated with a marina.

Non-Degradation Alternative

This is a water-dependent project. The Non-Degradation Alternative is no-build; therefore, there are no biological or physical impacts.

10c) APPLICANTS PROJECT COSTS.

Minimum Degradation Alternative

Cost Effectiveness

The following costs are based on 2013 prices.

Current Opinion of Probable Construction Cost	\$
Site preparation and mobilization	548,000
Site work and utilities	2,864,000
Marina dockage and attenuators	5,757,000
Basin excavation and shoreline improvements	2,263,350
Floating administration and fueling buildings	598,000
Project sub-total	12,030,350
Contingency (25%)	3,007,588
Total	\$15,037,938

Anticipated Profits and Losses

A detailed Financial Performance memorandum (January 25, 2012) was prepared by TAI Realty Advisors based on schematic designs and construction estimates at the time. The analysis assumes that a private developer will partner with ODNR to operate the marina as well as peripheral revenue-generating activities such as a convenience store/grill and rental boat fleet. While the design and subsequent construction costs have been refined slightly since the Financial Performance analysis was completed (the current design calls for 419 slips rather than 393 slips assumed in the study, for example), designs, and costs are similar enough to be analogous and useful. The following projections from the 2012 Financial Memorandum indicated that the marina construction was financially feasible.

Project Cost per January 2012 Financial Memorandum		\$
Design, engineering, construction and contingency	12,655,000	
Less developer contribution	4,777,000	
ODNR Costs	7,878,000	
Number of slips	393	
ODNR cost/slip	20	

Projected revenue, expenses and cash flow (\$'000)										
Year	1	2	3	4	5	6	7	8	9	10
Operating Revenue	559	587	656	686	705	716	736	741	760	765
Operating Expenses	259	269	281	288	294	305	309	317	324	330
Cash Flow	300	318	375	398	411	411	427	424	436	435

Note: Retirement of debt will come out of Cash Flow.

Availability, Reliability, Operation and Maintenance Difficulty

Proven technology is available to complete the project as proposed. The expected life of the project is 50-years. We do not anticipate the need for major repairs. However, the structure will be inspected each year for integrity and safety, and will be repaired as appropriate. Anticipated ongoing minor maintenance activities include necessary trash removal, replacing light bulbs as necessary, and other minor maintenance activities to keep the facilities in operable condition. Maintenance dredging of the marina is not anticipated. We do not believe any recurring maintenance activities will negatively affect water quality.

Preferred Alternative

Cost Effectiveness

The following costs are based on 2013 prices.

Opinion of Probable Construction Cost	\$
Site preparation and mobilization	537,085
Site work and utilities	3,189,575
Marina dockage and attenuators	5,704,000
Basin excavation and shoreline improvements	4,556,500
Floating administration and fueling buildings	850,000
Project sub-total	14,837,160
Contingency (25%)	3,709,290
Total	18,546,450

Anticipated Profits and Losses are based on the same assumptions described in the Minimum Degradation Alternative. Due to increased costs associated primarily with basin excavation from the uplands, this alternative requires greater financial investment than the Minimum Degradation Alternative.

Availability, Reliability, Operation and Maintenance Difficulty are similar to those described in the Minimum Degradation Alternative.

Non-Degradation Alternative

This is a water-dependent project. The Non-Degradation Alternative is no-build.

10d) SEWAGE PROJECTS.

Not applicable. The project is not part of a regional sewer and collection facility.

10e) OTHER RELATED PROJECTS.

ODNR currently has several projects that are anticipated to begin in the spring of 2013 nearby, within Caesar Creek State Park. With grant dollars, the Ohio Division of Wildlife intends to replace worn and unstable floating docks at Wellman Meadows and Furnas Shores as well as the restroom facilities at both of these locations.

Other planned projects include repair and repaving of roads to the Day Lodge off Clarksville Road, which have deteriorated and will require significant upgrades to ensure the continued rental of the lodge. In general, as funds are acquired, all roads in the park will be repaired and resurfaced.

10f) WATER POLLUTION CONTROLS.

Minimal Degradation Alternative

Construction

This project disturbs more than 5-acres of land, which will require a Construction Stormwater General Permit (NOI) from the Ohio EPA. (Permit No.: OH0000030). All requirements of this permit will be followed. Silt fence and other erosion control best management practices per sheets C101 and C102 included in Tab 9 and as a part of the full size Supplemental Drawings, will be used during construction to protect the lake and unnamed tributaries from runoff until the site is stabilized. Erosion control mats will be used for seed establishment on all slopes exceeding 4H : 1V and through all drainage swales. Projected costs of erosion control measures are as follows:

Cost Element	\$
Silt Fence	16,000
Erosion Mat	5,000

Construction along the shore of Caesar Creek Lake will be completed in the dry during the period of the lake drawdown.

Construction of the new southerly unnamed tributary (ET3) will be completed in the dry because of its location and elevation in conjunction with Phase 2 construction, expected to begin Spring/Fall of 2014.

The majority of restoration of the northerly tributary (ET1/ET2) will be completed in the dry because of its location and elevation. Areas that cannot be completed in the dry will require cofferdams and/or bypass pipes to maintain flows up to the 10-year event during construction. All work associated with the northerly tributary (ET1/ET2) will be included in Phase 1 construction.

Maintenance and Operation

While Green Marina certification is reserved for water bodies on the Great Lakes, the ODNR has committed to maintaining Green Marina standards during the operation of the marina.

Fuel tanks are anticipated to hold 2,000 to 3,000 gallons of gasoline. Tanks will be filled using a remote fill system located near the parking lot adjacent to the entry drive. An alarm system will be installed to alert the tanker man to stop the flow of fuel to the tanks at the appropriate time. The fuel line used to fill the tanks will be completely drained of fuel between fillings.

A sanitary pump-out with two hose stands will be located immediately adjacent to the fuel dock.

Stormwater runoff from the parking lot will be conveyed through a series of stormwater filtration zones (0.701-acres) to remove contaminants prior to the water discharging into the lake.

Preferred Alternative

Water pollution control measures for the Preferred Alternative are similar to those proposed for the Minimum Degradation Alternative.

Non-Degradation Alternative

This is a water-dependent project. The Non-Degradation Alternative is no-build.

10g) HUMAN HEALTH IMPACTS.

Minimal Degradation Alternative

We do not expect lowered water quality and therefore do not expect adverse effects to human health. Proposed improvements will enhance public access to the park and lake which will benefit human health by promoting outdoor recreation.

Overall water quality may improve as part of the project. Shoreline treatments will reduce erosion and sedimentation in the lake. Restoration of the unnamed tributaries will reduce erosion and sedimentation, and increase the filtering of stormwater prior to discharging into the lake.

Preferred Alternative

Human health impacts for the Preferred Alternative are similar to those proposed for the Minimum Degradation Alternative.

Non-Degradation Alternative

This is a water-dependent project. The Non-Degradation Alternative is no-build.

10h) JOBS CREATED AND REVENUES GAINED.

Minimal Degradation Alternative

The proposed project will generate approximately 20 temporary construction jobs, which would be sustained throughout the duration of construction. The project will generate and support approximately four full time seasonal positions that will persist annually during the eight month boating season.

The financial analysis described under 10c Applicants Project Costs indicated that the marina is expected to generate \$300,000 to \$435,000 in income annually over the next 10 years, excluding debt reduction.

An Ohio Sea Grant study entitled Recreational Boating in Ohio prepared by Leroy J. Hushak (1998) summarizes the results of a random study of 5,544 boating households in Ohio. The study concludes that boaters travel on average 38-miles, one-way, to their site. Excluding boat loan payments, each recreational boat-owning household spends \$5,627 on boating-related expenses. Presumably, most of the expenditures occur within the average 38-mile radius of the boating site.

Demographics for Warren County, Ohio: population, 214,910; median income, \$71,961; persons below poverty level 2007-2011, 6.3%; unemployment rate, 7.5% +/-; population growth 1990-2010, 87%.

The median household income in Warren County is \$71,961 or 50% over the state average. High income combined with population increase over a 10-year period suggest that property values in Warren County are increasing, and will continue to increase with more amenities such as the proposed project.

The proposed project is projected to have a tremendous impact on recreational and commercial opportunities at Caesar Creek State Park. As mentioned above, the marina is expected to generate up to \$435,000 per year in income. This excludes indirect expenditures by boating households who in 1998 spent more than \$5,000 on boating-related items. These expenditures are all expected to bring new revenues to regional businesses.

The proposed project should generate significant "curb appeal" by motorists driving over the State Highway 73 bridge overlooking Caesar Creek Lake and the proposed marina. The shape of the marina as defined by the attenuators is appealing, and the presence of watercraft in and around the marina will only enhance the overall sightlines. Landscaping and natural area restoration has been carefully designed to provide habitat for wildlife, and to enrich the experience of users looking for an attractive, pastoral setting. Many users of the park and marina will have a very new aesthetic experience by gaining access to the water using boats, or walking along the land-based or floating trails.

Preferred Alternative

Jobs created and revenues gained for the Preferred Alternative is similar to that of the Minimal Degradation Alternative.

Non-Degradation Alternative

This no-build alternative would continue the status quo, and thus not provide any positive impacts to jobs and quality of life in the community.

10i) JOBS AND REVENUES LOST.

Minimal Degradation Alternative

We do not believe any jobs will be directly or indirectly lost due to the project.

We do not believe any state or local tax revenues will be directly or indirectly lost due to the project.

We do not believe the project will directly or indirectly result in lowered property values.

We do not believe the project will directly or indirectly result in negative impacts to recreational or commercial opportunities of the water resource (including tourism), as the project will result in increased public opportunities for recreational access.

We do not believe the project will directly or indirectly result in negative impacts to any businesses.

We do not believe the project will directly or indirectly result in negative aesthetics of the water resource.

Preferred Design

Items related to jobs and revenues lost would be similar to the Minimal Degradation Alternative.

Non-Degradation Alternative

This no-build alternative would continue the status quo. Social and economic impacts include loss of tourism related to the marina.

10j) ENVIRONMENTAL BENEFITS LOST OR GAINED.

Minimal Degradation Alternative

The proposed plan results in the permanent loss of four non-forested wetlands (0.174-acres); the impact of 60-linear feet of stream conveyed through a new culvert for a new road crossing; and the restoration of the northerly (ET1/ET2) and southerly (ET3) tributaries. Most of the remaining parkland will be

restored or landscaped to native plant communities. Additionally, fish habitat will be substantially improved through the creation of 0.419-acres of new spawning habitat, and the placement of fish structure in deep water habitats.

The natural sediment-moving capabilities of the two restored unnamed tributaries will remain intact as the plan maintains a baseflow and bankfull natural channel design. The ecological function of each channel will be greatly enhanced as the existing, straight channels will be restored to a meandering natural channel with a connected floodplain that includes vernal pools.

The filtering capability of preserved wetlands will be enhanced as the upland buffer around each wetland will be restored from old field vegetation of marginal ecological value to native plant communities with greater filtering and soil stabilization characteristics.

Stream impacts will be mitigated by dechannelizing the straightened channels and restoring a natural stream corridor including a baseflow channel, bankfull bench, and connection with the floodplain. The northerly unnamed tributary (ET1/ET2) will be restored to a 405-foot long natural channel from an existing 376-foot long channelized channel. The southerly unnamed tributary (ET3) will be restored to a 630-foot long natural channel from a 110-foot long eroding ditch.

Wetland impacts totaling 0.174-acres will be mitigated by creating a total of 0.697-acres of wetlands including 0.247-acres of emergent wetland along the lake; 0.738-acres of wetland along the restored unnamed tributaries; and 0.175-acres of a created emergent/sedge meadow wetlands.

Preferred Design

The preferred design results in the permanent loss of seven non-forested wetlands (0.347-acres), 868-feet of the northerly unnamed tributary (ET1/ET2), 110-feet of the southerly unnamed tributary (ET3) and the Young Angler's Pond (.551-acres).

Stream impacts will be mitigated by creating a 1,000-foot naturalized stream corridor that runs parallel to the new northerly parking area. The proposed stream corridor will include a baseflow channel, bankfull bench, and connection to the existing floodplain.

Wetland and Young Angler's Pond impacts totaling 0.898-acres will be mitigated by creating a total of 1.721-acres of wetlands along the easterly parking trays and adjacent to the new marina basin.

Non-Degradation Alternative

This is a water-dependent project. The Non-Degradation Alternative is no-build.

10k) MITIGATION TECHNIQUES.

Minimal Degradation Alternative

See Mitigation Plan (Tab 8) for Minimal Degradation Alternative mitigation techniques.

Preferred Design

Credits from an approved wetland bank will be purchased for the Preferred Design alternative.

Non-Degradation Alternative

This is a water-dependent project. The Non-Degradation Alternative is no-build.