

Five Lakes Sediment Removal Plan LaGrange County, Indiana

August 21, 2008



Prepared for:

Five Lakes Conservation Association, Inc.
P.O. Box 307
Wolcottville, IN 46795-8946

SEDIMENT REMOVAL PLAN

Five Lakes Conservation Association

LaGrange County, Indiana

Project Contact:

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Project Purpose:

The Five Lakes, which are also known as the Indian Lake chain, are located just west of Wolcottville, in southern LaGrange County, Indiana (Figure 1). The Five Lakes consist of Witmer Lake, Westler Lake, Dallas Lake, Hackenburg Lake, and Messick Lake in order from east to west. The combined lakes have approximately 650 acres of open water. The lakes are located on, and connected by the Little Elkhart River which flows from approximately 35,000 acres in Eastern Lagrange and northeastern Noble County. The Five Lakes Conservation Association has participated in the Indiana Department of Natural Resources (IDNR) Lake and River Enhancement (LARE) program since 1999 beginning with a diagnostic study and moving into several feasibility, design, and construction phases. The purpose of the report is to document the aerial extent and volume of sediments at the mouths of drainages and in other areas specifically identified by the lake association or others as public areas potentially in need of sediment removal.

This report identifies those areas that specifically qualify for IDNR LARE funding through the sediment removal program. Areas qualifying for LARE funding include documented sediment plumes at the mouths of incoming streams and sections of natural lake where accumulated organic material or sediment restricts public use in otherwise open areas of the lake. Other project areas, not documented, may be dredged in conjunction with a LARE-funded project and thus benefit from reduced equipment mobilization and spoils basin construction fees. All areas targeted for dredging must obtain appropriate state and federal permits prior to beginning work.

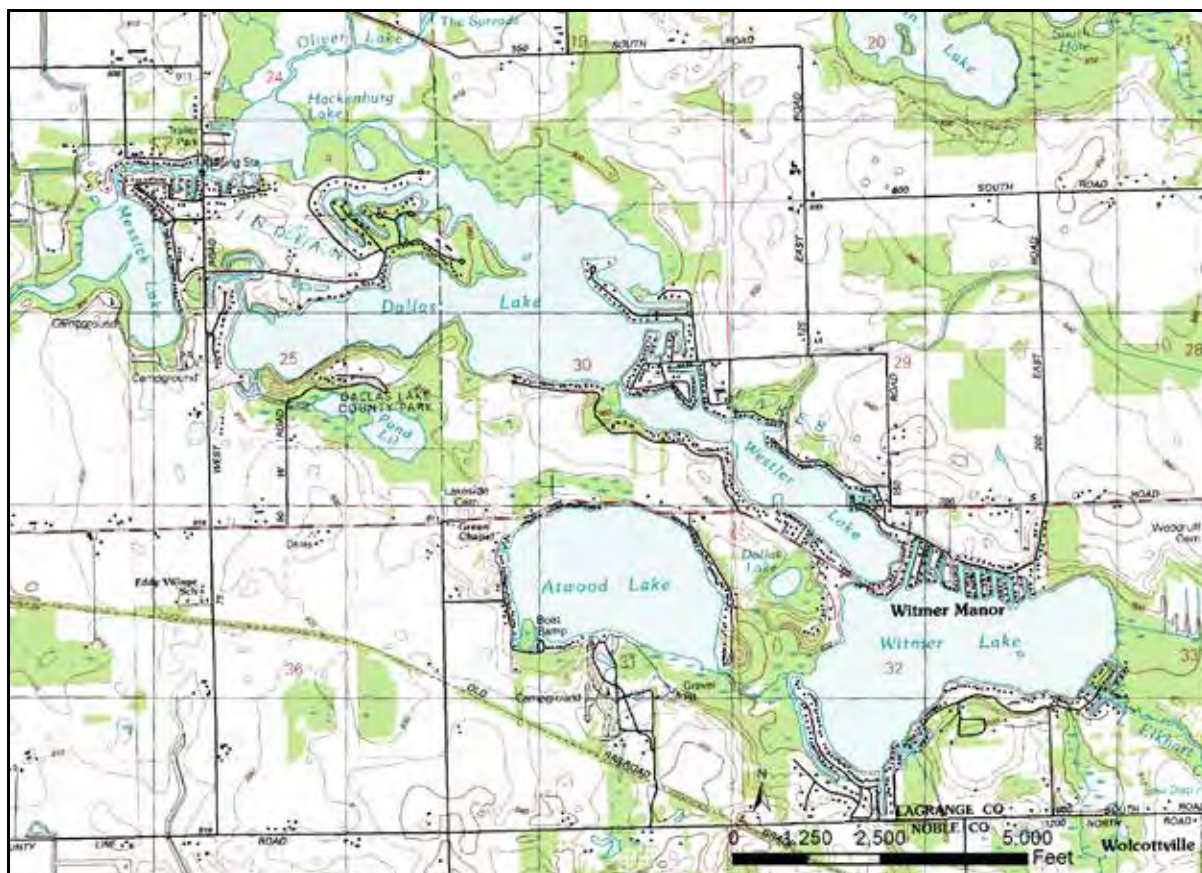


Figure 1. Location Map of Five Lakes, Lagrange County, Indiana

1.0 Methods

During August and October 2008, JFNew took two boat tours of the lake chain with residents on the lake. At the request of the IDNR fisheries biologist and lake residents reviewing the first draft, we toured several more sites in November 2008. Eight areas were examined including the mouth of Little Elkhart Creek into Witmer Lake; a channel on the north side of Witmer Lake that has a 36-inch diameter outlet pipe draining 40 or more acres of agricultural ground; the channel between Witmer and Westler Lake; a channel between Westler and Dallas Lake; the outfall of a drainage north of Westler Lake; the mouth of a channel on the north end of Dallas Lake; the outlet of Hackenburg Lake; and the outlet of Little Elkhart Creek into Messick Lake (Figure 2). Sampling was conducted by probing the substrate with a 1.5-inch diameter PVC pipe to measure the depth of accumulated sediment and the existing depth of water. A Thales Mobile Mapper GPS receiver was used to mark approximate areas of the samples; however, boat movement during sampling prevented precise marking of each probe. Sketches of each area were made in the field and the water and sediment depths were recorded on the field sketch. Aerial photographs of each proposed dredge area are contained in Appendix A. Recent photographs of each proposed dredge location are in Appendix B.



Figure 2. Proposed sediment removal locations, Five Lakes chain, LaGrange County, IN.

2.0 Project Area Descriptions

2.1 Project Area 1: The outlet of Little Elkhart Creek at Witmer Lake

Little Elkhart Creek flows into Witmer Lake at the east end of the lake crossing under E. 765 S. Road before it widens and empties into the lake. The previously dredged channel is approximately 250 feet long from the bridge to the lake and has a maximum width of 60 feet, a minimum width of 30 feet (at the bridge) and an average width of 47 feet. Directly downstream of the bridge in the center of the channel; the water level was 9 feet in depth with an additional 1.5 feet of soft sediment. The north side of the channel 40 feet downstream of the bridge quickly decreased in water depth to 4 feet or less but increased in sediment accumulation to as much as 3.5 feet. Sixty feet west of the bridge the channel depth decreased to 3 feet and contained 4.5 feet of accumulated sediment. The north and south sides of the channel had 2 feet of water depth or less

and up to 3 feet of sediment accumulation. Sediment accumulation decreased to less than 2 inches as the channel entered Witmer Lake. The accumulated sediment is fine silts and organics over a sand and gravel bottom.

Recommended dredging at this location will include an area of roughly 11,000 square feet with an average removal of 3 feet of accumulated sediments. The total sediment yield from this project should be less than 1,250 cubic yards. The dredging can be performed mechanically, or by hydraulic suction pumping. There is no sediment disposal basin site within a reasonable distance of this project site. Therefore, if hydraulic dredging is contemplated the contractor will have to pump into containment bags or directly into a truck for hauling.

2.2 Project Area 2: The easternmost channel on the north side of Witmer Lake

This artificially constructed channel is fed by a drainage basin of approximately 225 acres. The channel is located between S. 200 E. Road and S. 190 E. Road and dead ends at 735 S. Road. There is a 36-inch corrugated metal pipe (CMP) under 735 S. Road that clearly brings large amounts of sediment to the lake. The channel is approximately 50 feet wide throughout its 250 foot length. The banks of the channel are fairly steep rising 8-15 feet above the water level within 20 feet of the waters edge. Concrete seawalls or landscaping have been installed along both shorelines along a majority of the channel but some of the channel has significant shoreline erosion problems that may be due to high flows from the drain pipe.

Sampling within the channel documented 4 feet of water depth and additional 2 feet of accumulated sediments in the middle of the channel where it joins Witmer Lake. The channel gradually reduced to 2 feet in depth with 8 feet of accumulated sediment and organic debris near the pipe outlet. Approximately one-third of the channel was so choked with aquatic vegetation and or sediment that it was not accessible to boat traffic.

Recommended dredging at this location includes 12,500 square feet with an average depth of sediment removal of 4 feet amounting to approximately 1,850 cubic yards. Additional work recommended at this project area will be the stabilization of approximately 200 feet of the embankments on the channel. Stabilization could be accomplished by using dredge spoils pumped into bags that are subsequently planted to vegetation. Alternatively, hydraulic dredge spoils could be pumped to the same disposal basin used in site 5 below.

The following is a suggested list of plant species that could be planted into the spoil bags following dredging. The total number of plugs should be at least 1200 plugs. The species should include: blue flag iris, blue lobelia, Queen of the prairie, meadowsweet, ironweed, New England aster, butterfly milkweed, golden alexander, prairie cordgrass, brown fox sedge, and prairie dropseed.

2.3 Project Area 3: The channel between Witmer Lake and Westler Lake

The channel between Witmer and Westler Lakes passes under 700 S. Road. The channel is approximately 40 feet wide at the bridge and within 40 feet on either side of

the bridge it opens up into the respective lakes. The shallow nature of this channel has inhibited boat traffic by damaging props but also has caused sediment redistribution in the area from agitation of the substrate by props. Water depths measured during high water were a minimum of 3 feet under the bridge and in the approaches to the bridge. However, residents informed JFNew, that water levels typically drop one foot or more during late summer leaving 2 feet or less depth in this passage. Less than six inches of accumulated sediment were measured in the center of the crossing, however, as much as 5 feet of accumulated sediment was measured within 30 feet of the approach to the bridge on each side where prop wash settles the disturbed sediments.

Recommended dredging at this location includes approximately 7,000 square feet ranging in depth of sediment removal from less than 1 foot to as much as 5 feet. The average removal depth to obtain a minimum of four feet of water in the centerline of the channel and taper gradually to the shorelines will be approximately 2 feet. The approximate volume of sediment will be 518 cubic yards.

It is recommended that this area be dredged mechanically due to the sand substrate and the distance to a reasonable disposal area. The sediment could be temporarily stored on the adjacent residential lots and then hauled away after drying or placed directly onto a barge for dewatering and disposal at another location.

2.4 Project Area 4: The channel between Westler Lake and Dallas Lake

The Little Elkhart River flows from Westler Lake to Dallas Lake in an approximate 300 foot long channel that is 150 feet wide on the Westler Lake side and 50 foot wide on the Dallas Lake side. The channel is located just west of the junction of 660 S. and 070 E. The channel depth at high water levels averages approximately 3 feet and at low water levels often drops to less than 2 feet. The accumulated sediment in portions of the channel ranged from 0 to 3 feet with most of the sediment along the east shoreline of the channel. On average the accumulated sediment depth was approximately 1.5 feet in the proposed 40-foot wide by 500-foot long area of dredging.

Neil Ledet, the IDNR fisheries biologist for this region, related that several dredge permits have been granted for this channel previously. He suggested that a structure or plantings be developed to keep the sand bar located on the south shore of Dallas and just west of the channel, from migrating into the channel in the future. It is possible to use the dredge spoils pumped into a bag to create a groin that could be planted with emergent aquatic vegetation. This should be part of the permit application.

The recommended dredge area within Area 4 is a 40 foot wide channel dredged to an average water depth of 4 feet (20,000 square feet). It is recommended that the approximately 1,100 cubic yards of hydraulically or mechanically excavated spoils be pumped into a containment bag and placed perpendicular to the south shoreline of Dallas Lake approximately 30 feet west of the existing channel. The sediment laden bags should then be planted with emergent aquatic vegetation.

The containment banks come in various circumferences. In order to maximize the efficiency of the project it is suggested that the contractor utilize 120 feet of 90-inch circumference bags (three rows of three rows laid parallel) to form a 12-foot by 40 foot planting area.

The following is a list of plants that should be included in the planting area. The plants should be planted on spacing of 12 inches or less (500 estimated). The plants should include: hardstem bulrush, pickerel weed, common arrowhead, common burreed, and chairmakers (three-square) rush.

2.5 Project Area 5: The channel on the north side of Westler Lake

Located on the north shore of Westler Lake near the west end of the lake is the outlet for Frank Hogue Ditch #68. This ditch drains approximately 616 acres of predominantly agricultural ground. It passes under 670 S. Road before it empties into Westler Lake through a 36-inch CMP with an adjacent 48-inch diameter overflow culvert. A plume of exposed sediment 40-60 feet long and 80 feet wide extends out into the existing channel. We were informed that this "island" developed in last few years since it had been previously cleaned. Depth of sediment (predominantly sand) was not measured within this channel. For the purpose of this report we will assume that the original channel was six feet in depth in the center and sloped gradually to the embankments. The maximum channel depth in its current condition ranges from 0 at the north end to 4 feet at the mouth. The channel is approximately 100 feet wide and 500 feet long.

Work has been proposed in the watershed to reduce the sediment input to this channel. It is recommended that livestock access to the stream be eliminated or a sediment basin constructed prior to the stream emptying into the channel.

We recommend that the channel be dredged to its original condition. The area of proposed dredging is 20,000 square feet and contains approximately 2,200 cubic yards of sediment. The work could be completed by mechanical removal or by hydraulic dredging. Hydraulic dredging would require the use of the agricultural ground immediately across the gravel road from the mouth of the channel.

2.6 Project Area 6: The mouth of the channel on the east end of Dallas Lake

Pea gravel has accumulated for a number of years at the mouth of an artificial channel at the east end of Dallas Lake. The channel is on the east side of E 635 S. Road. The pea gravel accumulation above the lake surface is a maximum of 40 feet wide and 120 feet long, extending along an entire residential lot. The pea gravel has apparently accumulated from historic beach development on Dallas Lake to the west of the channel mouth. These beach development activities have since been halted. The gravel bar that developed from the migrating sand and gravel is a hazard to navigation and attracts geese and other animals. The gravel bar is approximately 2,600 square feet and averages 2.5 feet in depth.

Recommended removal of this gravel bar is by mechanical means. The expected volume of sand and gravel to be removed would be approximately 250 cubic yards.

2.7 Project Area 7: The outlet of Hackenburg Lake at 075 W Road

The Little Elkhart River flows from Dallas Lake into Hackenburg Lake and then from Hackenburg Lake to Messick Lake. As the river leaves Hackenburg Lake organic matter and sediments have accumulated at the entrance to the channel just west of 075 W. Road. The private channels off to the north and south sides of the lake in this area have from 3-5 feet of accumulated sediments. These private channels can not be dredged with LARE funding; however, if the main channel is dredged with LARE funding the cost to the private channel dredging becomes affordable to the adjacent residents.

The south half of the channel ranges from 3 feet deep to less than 1 foot deep at the shoreline with as much as 5 feet of accumulated silt and organic debris. The average depth of sediment to be removed is approximately 2.5 feet. Recommended dredging would occur in an area 30 feet wide and 350 feet long. Approximately 970 cubic yards of material would be removed from this project area.

2.8 Project Area 8: The outlet of Little Elkhart Creek into Messick Lake

At the mouth of Little Elkhart Creek into Messick Lake the channel has deposited a plume of sediment of approximately 5,000 square feet. The depth of this accumulated sediment was 1.5 feet in water depths of 2.5 to 3.5 feet.

Recommended dredging in this area would be limited to the identified sediment plume or approximately 278 cubic yards of material. This site would receive the lowest priority due to the absence of any other dredging needs in the vicinity.

2.9 Sediment Disposal Options

Site 1: This area can be hydraulically or mechanically dredged. If hydraulically dredged, the material can be pumped north to spoils Site A1 or south to Site A2 (Figure 3). A1 is approximately 2000 feet and A2 is approximately 1000 feet from site 1.

Site 2: This area should be hydraulically dredged. The material can be pumped north to spoils Site A1 (approximately 2,000 feet) or south to Site A2 (approximately 2,500 feet). Site 2 spoils could also be pumped to spoils Site B1, which is approximately 2,000 feet.

Site 3: This area can be hydraulically or mechanically dredged. If hydraulically dredged, the material can be pumped north to spoils Site B1 (approximately 1,600 feet) or B2 (approximately 2000 feet).

Site 4: Spoils will be pumped or mechanically excavated and used to construct a groin with a maximum travel distance of 500 feet. If the groin is not permitted then spoils may have to be trucked or pumped to C1 (3,000 feet), C2 (2,000 feet), or C3 (1,500 feet).

Site 5: This area should be hydraulically dredged. The material can be pumped to spoils Site C1 (approximately 300 feet), Site C2 (approximately 1,200 feet), or Site C3 (approximately 2,000 feet).

Site 6: This area should be mechanically dredged and hauled on public roadways to C1 (1,200 feet), C2 (2,200 feet), or C3 (8,000 feet).

Site 7: This area should be hydraulically dredged. The material can be pumped to spoils Site D1 (approximately 1,000 feet) or Site D2 (approximately 2,000 feet).

Site 8: This area should be hydraulically dredged. The material can be pumped to spoils Site D1 (approximately 1,800 feet) or Site D2 (approximately 1,500 feet).

3.0 Prioritization of Sediment Removal areas

The following projects are listed in an order of priority. The order is based on the purpose of removing sediments that inhibit recreational boating and cause or are likely to cause nutrient pollution to one or more of the lakes because of resuspension.

- 1) Project Area 4, the channel between Westler Lake and Dallas Lake
- 2) Project Area 3, the channel between Witmer Lake and Westler Lake
- 3) Project Area 5, the channel on the north side of Westler Lake
- 4) Project Area 2, the easternmost channel on the north side of Witmer Lake
- 5) Project Area 6, the mouth of the channel on the east end of Dallas Lake
- 6) Project Area 1, the outlet of Little Elkhart Creek at Witmer Lake
- 7) Project Area 7, the outlet of Hackenburg Lake at 075 W Road
- 8) Project Area 8, the outlet of Little Elkhart Creek into Messick Lake

Preferred Spoil locations sites in order of dredging priorities for the FLCA are Site C2, B1, and A1.

5.0 Cost Estimates

Area 1: Approximately 11,000 square feet and 1250 cubic yards @ \$15/cu yd ..	\$18,750
Mobilization of equipment for this project.....	\$10,000
Area 2: Approximately 12,500 square feet and 1850 cubic yards @ \$15/cu yd ...	\$27,750
Mobilization of equipment for this project.....	\$10,000
200 feet of bank stabilization planting, 1200 plugs @ \$4.00*	\$4,800
Area 3: Approximately 7,000 square feet and 518 cubic yards @ \$15/cu yd	\$7,770
Mobilization of equipment for this project.....	\$10,000
Area 4: Approximately 20,000 square feet and 1100 cubic yards @ \$15/cu yd ..	\$16,500
Mobilization of equipment for this project.....	\$10,000
Planting of the vegetative zone 500 plant plugs @ 4.00* each	\$2,000

Area 5: Approximately 20,000 square feet and 2200 cubic yards @ \$15/cu yd .	\$33,000
Area 6: Approximately 2,600 square feet and 250 cubic yards @ \$15/cu yd.....	\$3,750
Mobilization of equipment for this project.....	\$2,000
Area 7: Approximately 10,550 square feet and 970 cubic yards @ \$15/cu yd	\$14,550
Mobilization of equipment for this project.....	\$10,000
Area 8: Approximately 5,000 square feet and 278 cubic yards @\$15/cu yd	\$4,170
Mobilization of equipment for this project.....	\$15,000
Total for all Projects.....	<u>\$200,040</u>
15 percent Project Administration, Management, and Reporting	<u>\$30,006</u>
Project Total	\$230,046
The LARE program would pay up to 75 percent of that total:	\$172,534
The Five Lakes Conservation Association 25 percent:	\$57,512

* Cost estimate for plants includes materials and labor

The Project Administration, Management, and Reporting fee is higher than normal on dredging projects due to the amount of communication necessary to pull off a successful project. Much of the local communication work can be completed by individual volunteers who live on the lake. Credit for the volunteer work can be used to reduce the cash match simply by documentation of hours and expenses. JFNew's recommendation is to pursue the projects in the following order.

Phase 1: Apply for LARE funding to complete project areas 3, 4, 5, and 6 all of which are accessible from Westler and Dallas Lakes. The estimated fee using the above cost estimates (including the 15 percent administration fee) for these three projects is \$97,773. A 25% local match would mean that Five Lakes Association would need up to \$25,000 for this first phase of dredging. Half or more of the local match could be earned by Lake Association members volunteering to manage the dredge project. We recommend applying for a LARE grant with a total maximum project fee of \$100,000 and pledging \$25,000 (cash and in-kind services) in local support.

Phase 2: Apply for LARE funding to complete projects 1 and 2 on Witmer Lake for a total cost of \$71,300. The 25% cost share would be \$17,825. Member contributions of time during the dredge project could reduce the local cash match to approximately \$9,000 or less.

Phase 3: Apply for LARE funding to complete projects 7 and 8 on the west end of Hackenburg Lake and the east end of Messick Lake. The estimated cost for these two projects is \$50,278. The local cost share would be between \$6,300 and \$12,600 depending upon member contributions of time.

6.0 PERMITS

An IDNR lake permit is required for sediment removal from public freshwater lakes. IDNR permits applications require a public notice to all adjacent landowners at each site. A separate permit application will be required for each lake. A \$100 processing fee is required for each application. Typically, three to four months and from 10-20 hours of work are required to obtain each IDNR permit. A meeting was held with the IDNR fisheries biologist to discuss the potential of permitting the eight sites contained in this document. The biologist expressed no significant concerns with any of these sites, although a fish spawning restriction from April 1 to June 30 will be enforced. Permits were obtained on March 30 and 31, 2010 (Appendix C).

The Indiana Department of Environmental Management (IDEM) and the US Army Corps of Engineers (Corps) regulate the discharge of dredge or fill material into waters of the United States and also regulate the discharge of return water from hydraulic dredge operations. If the projects are completed mechanically with excavation equipment, or the hydraulic dredge material is pumped into contained bags in upland areas, no permits will be required from IDEM or the Corps. If the bags are placed in the water it will be considered a discharge of fill into Waters of the United States and will require a permit from the Corps and IDEM. A Regional General Permit (generally requiring notification and a 30 day waiting period) should apply to less than 1/10 acre (4,256 sq. ft). The regular permit process will apply to the return water from an upland contained disposal basin. During the application process for any proposed return water discharge IDEM may require that the sediment be tested for contaminants by a certified lab.

7.0 SCHEDULE

The proposed dredging schedule begins with the application for LARE funds by January 15, 2009. LARE funding for sediment removal projects is granted during March. After the grant is awarded, the Five Lakes Conservation Association will select a consultant or a lake association volunteer to perform project administration and management and complete a contract approved by LARE staff. The project administrator would then prepare the bid documents for the areas of dredging. The bid should be submitted to contractors between April and May 2009. Contracts should be awarded and signed by June 2009. Work will be completed as contractor workloads allow but hopefully will begin during the fall of 2009 and be completed by the fall of 2010.

Permit applications should be submitted as soon as the contractor is selected and a method of sediment removal and disposal planned. Once permit applications are submitted, it may take up to four months to receive the permits.

Generally, the method of sediment removal is decided upon within this planning phase. However, because the dredge sites are significantly different from one another, and because the potential contractors have a variety of equipment with each contractor preferring different methodologies, it is more efficient and cost effective to allow the contractors to determine the sediment removal method for each site, and allow the bidding process to determine which method is most efficient.

8.0 PROJECT SUMMARY

Eight areas were considered for sediment removal within the Five Lakes chain near Wolcottville, LaGrange County, Indiana. The eight areas are ranked in priority based on their importance to the involved lake association members, their proximity to each other, and their importance at reducing nutrients to the lakes. JFNew recommends that the projects be pursued in three phases. The first phase would involve four projects at an estimated cost of \$100,000. The second phase would involve two projects at an estimated cost of \$71,300 and the final phase would include two projects at an estimated cost of \$50,278. Grant applications are due January 15 and grant awards are announced in late March of each year. Immediately following the notification of a grant award the Five Lakes Conservation Association shall appoint or contract with a project administrator and proceed with obtaining bids for the dredge work. After a dredge contractor is awarded the work, the administrator shall apply for the required DNR permit based on the methodologies proposed by the dredge contractor.

Appendix A

Proposed Sediment Removal Locations within the Five Lakes

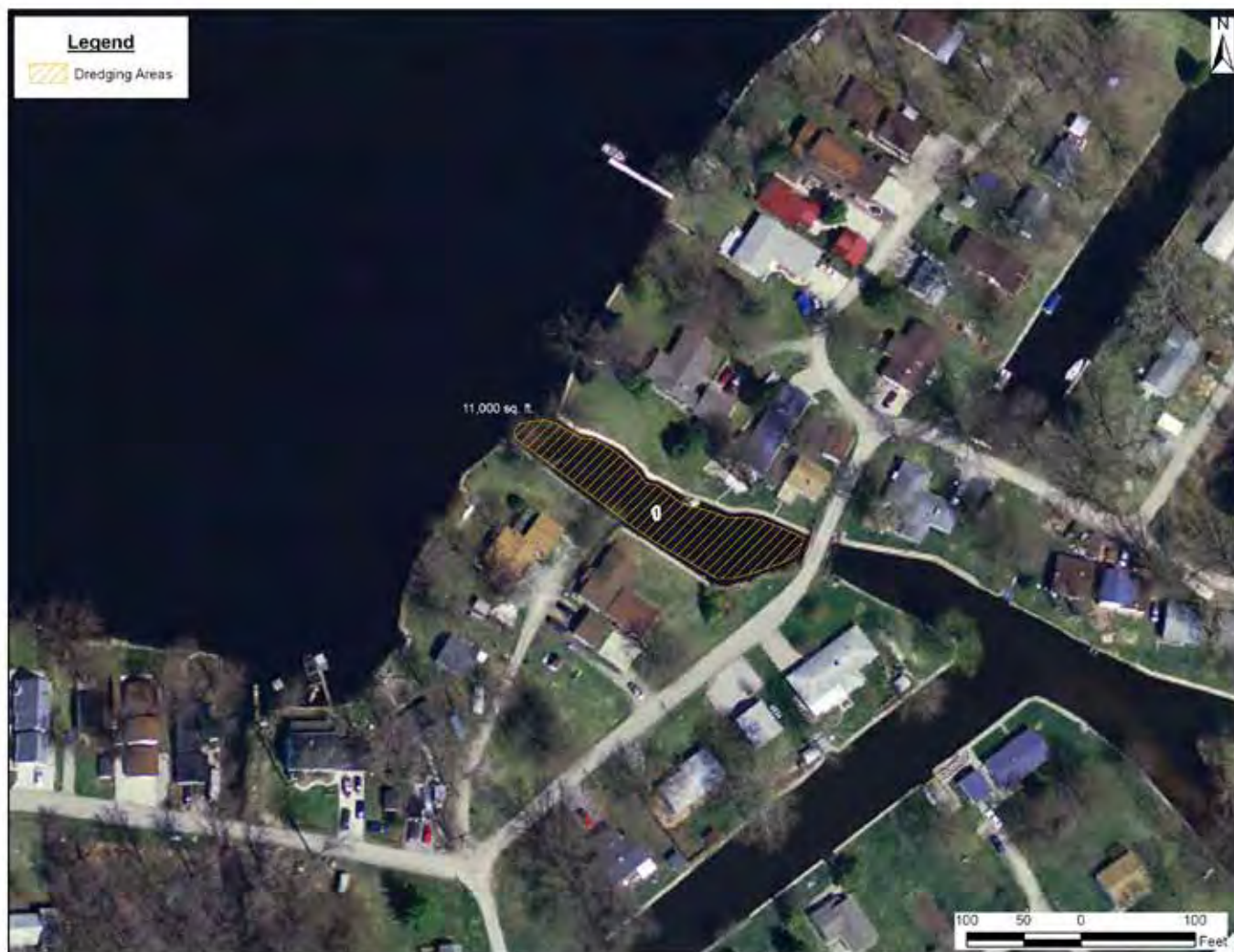


Figure 1: Proposed dredge Area 1: The outlet of Little Elkhart Creek at Witmer Lake



Proposed Dredge Area 2: The easternmost channel on the north side of Witmer Lake.



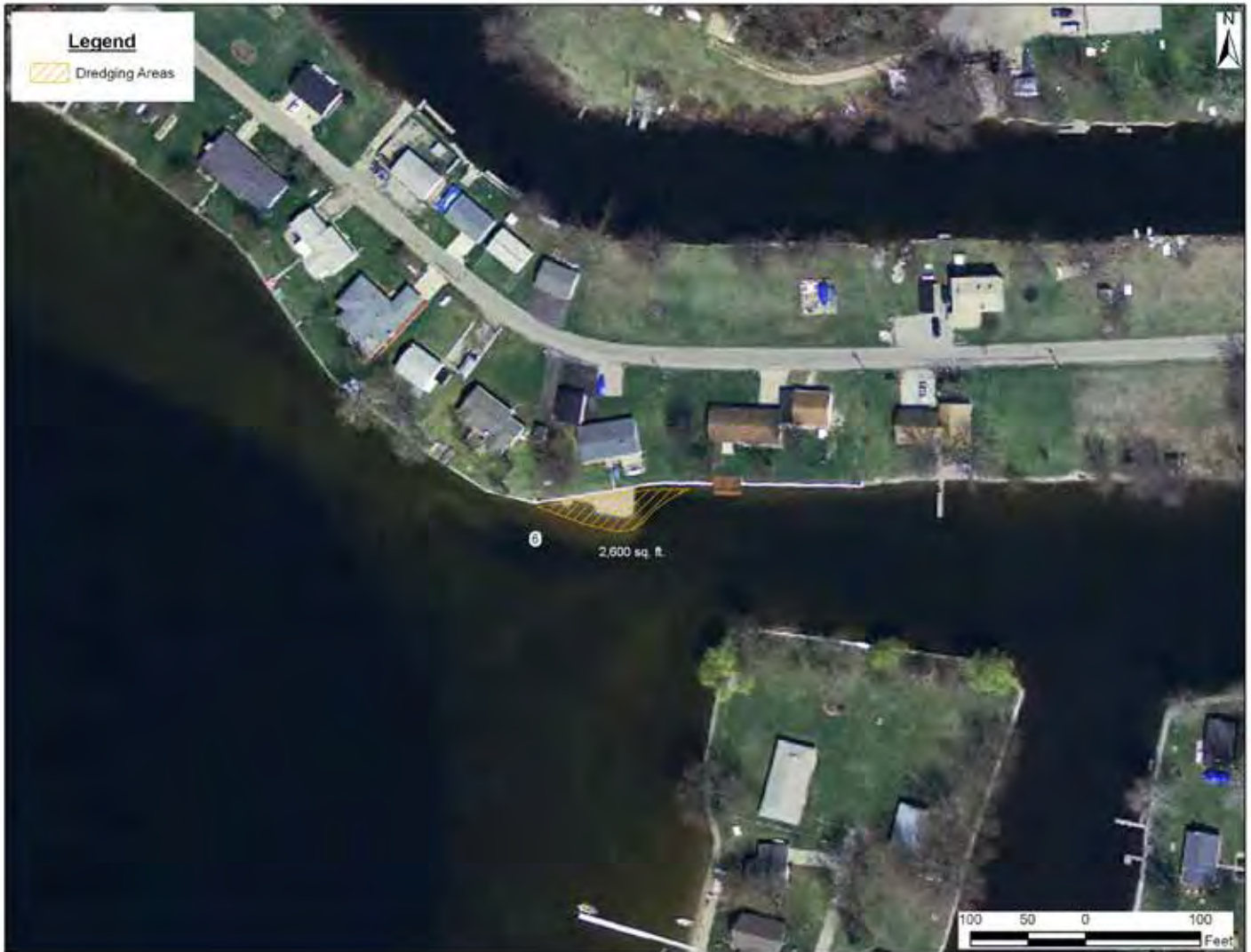
Proposed Dredge Area 3: The channel between Witmer Lake and Westler Lake



Proposed Dredge Area 4: The channel between Westler Lake and Dallas Lake



Proposed Dredge Area 5: The channel on the north side of Westler Lake



Proposed Dredge Area 6: The mouth of the channel on the east end of Dallas Lake



Proposed Dredge Area 7: The outlet of Hackenburg Lake at 075 W Road



Proposed Dredge Area 8: The outlet of Little Elkhart Creek into Messick Lake

Appendix B

Photographs of
Proposed Sediment Removal Areas within the Five
Lakes



Facing east at channel mouth (top) and then from bridge looking west toward lake (bottom). The primary dredge area is to the left of the bottom photograph.

Area 1



Facing south (top) and north (bottom) from the center of the channel in the northeast corner of Witmer Lake. A 36" CMP drains 225 acres to this channel from the north. Note sediment plumes from pontoon boat motor in channel.

Area 2



Facing northwest from Witmer Lake (top) and southeast from Westler Lake (bottom) at 700 S over the channel between the lakes.

Area 3



Facing north at the channel between Westler and Dallas Lake from the south end.



Facing south at the channel between Westler and Dallas Lake from the north end



Facing south at the outlet of the channel into Dallas Lake from about 200 feet out into the lake

Area 4



Facing west (top) then east (bottom) at outlet of the Frank Hogue Ditch #68 as it empties into a Westler Lake channel under 670 S. Road. The ditch drains 616 acres.

Area 5



Facing east (top) and west (bottom) from west end of channel on the east end of Dallas Lake adjacent to E 635 S Road. The substrate is pea gravel that has washed into area from the northwest.

Area 6



Facing Northeast (top) and east from 075W bridge over the outlet channel from Hackenburg Lake

Area 7



The outlet of Little Elkhart Creek into Messick Lake

Area 8

Appendix C

PERMITS

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

CERTIFICATE OF APPROVAL
PUBLIC FRESHWATER LAKE

APPLICATION # : PL-21453
LAKE : Dallas Lake
APPLICANT : Five Lakes Conservation Association Inc
Robert Christen
PO Box 307
Wolcottville, IN 46795-8946

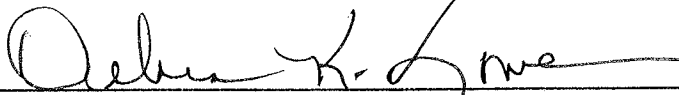
MAILED MAR 31 2010

AGENT : JFNew & Associates
John Richardson
708 Roosevelt Road
Walkerton, IN 46574-1220

AUTHORITY : IC 14-26-2 with 312 IAC 11

DESCRIPTION : A 400' long, 50' to 150' wide area (Site 1) of an existing channel between Dallas and Westler Lake will be dredged to its original condition to facilitate boat traffic. The proposed dredging will occur along the eastern 40' of the channel extending 50' to 75' into the lake. The depth of dredging will not exceed 4' below the legal lake level sloping uniformly to a depth of 1' or less at the shoreline. The dredged material will be contained within geotubes that will be placed in a 20' by 60' area (Site 2) of Dallas Lake (immediately west of the channel entrance) as a groin to prevent future migration of sand into the channel. The geotube groin will be planted to native emergent vegetation. Accumulated sand and pea gravel will be removed from an existing channel by excavating to a maximum depth of 6' below the legal level of the lake at the center of the channel and sloping uniformly to a depth of 1' or less at the shoreline. The excavated material will be transported to an upland containment area for dewatering and disposal. Water from the containment area will not be allowed to return to the lake. Additionally, a 40' wide by 120' long accumulated sand and pea gravel bar (Site 3) will be removed by excavating to a maximum depth of 2.5' below the legal level of the lake. The excavated material will be transported to an upland area and use on other project. Details of the project are contained in information received electronically at the Division of Water on December 11, 2009 and in plans and information received at the Division of Water on January 19, 2010.

LOCATION : Project area 1; channel off of East 635 South Road,
Project area 2; channel between Dallas and Westler Lake at junction East 650
South Road and South 085 East near Valentine, Johnson Township, LaGrange
County
Section 30, T 36N, R 10E, Oliver Lake Quadrangle
UTM Coordinates: Downstream 4600643 North, 632421 East

APPROVED BY : 
Debra K. Lowe, CFM, Environmental Manager
Division of Water

APPROVED ON : March 30, 2010

Attachments: Notice Of Right To Administrative Review
General Conditions
Special Conditions
Service List

**STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES**

GENERAL CONDITIONS

APPLICATION #: PL- 21453

- (1) If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al) and State Law (IC 14-21-1) require that work must stop and that the discovery must be reported to the Division of Historic Preservation and Archaeology within 2 business days.

Division of Historic Preservation and Archaeology
Room W274
402 West Washington Street
Indianapolis, IN 46204

Telephone: (317) 232-1646, FAX: (317) 232-8036

- (2) This permit must be posted and maintained at the project site until the project is completed.
- (3) This permit does not relieve the permittee of the responsibility for obtaining additional permits, approvals, easements, etc. as required by other federal, state, or local regulatory agencies. These agencies include, but are not limited to:

<u>Agency</u>	<u>Telephone Number</u>
LaGrange County Drainage Board	(260) 463-7818
St. Joseph River Basin Commission	(574) 287-1829
Indiana Department of Environmental Management	(317) 233-8488 or (800) 451-6027
Local city or county planning or zoning commission	

- (4) This permit must not be construed as a waiver of any local ordinance or other state or federal law.
- (5) This permit does not relieve the permittee of any liability for the effects which the project may have upon the safety of the life or property of others.
- (6) This permit may be revoked by the Department of Natural Resources for violation of any condition, limitation or applicable statute or rule.
- (7) This permit shall not be assignable or transferable without the prior written approval of the Department of Natural Resources. To initiate a transfer contact:

Mr. Michael W. Neyer, PE, Director
Division of Water
Room W264
402 West Washington Street
Indianapolis, IN 46204

Telephone: (317) 232-4160, Toll Free: (877) 928-3755
FAX: (317) 233-4579

- (8) The Department of Natural Resources shall have the right to enter upon the site of the permitted activity for the purpose of inspecting the authorized work.
- (9) The receipt and acceptance of this permit by the applicant or authorized agent shall be considered as acceptance of the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

**STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES**

SPECIAL CONDITIONS

APPLICATION #: PL- 21453

PERMIT VALIDITY : This permit is valid for 24 months from the "Approved On" date shown on the first page. If work has not been completed by March 30, 2012 the permit will become void and a new permit will be required in order to continue work on the project.

This permit becomes effective 18 days after the "MAILED" date shown on the first page. If both a petition for review and a petition for a stay of effectiveness are filed before this permit becomes effective, any part of the permit that is within the scope of the petition for stay is stayed for an additional 15 days.

CONFORMANCE : Other than those measures necessary to satisfy the "General Conditions" and "Special Conditions", the project must conform to the information received by the Department of Natural Resources on: December 11, 2009 and January 19, 2010. Any deviation from the information must receive the prior written approval of the Department.

Number	Special Condition
(1)	minimize the movement of resuspended bottom sediment from the immediate project area
(2)	revegetate all bare and disturbed areas landward of the shoreline with a mixture of grasses (excluding all varieties of tall fescue) and legumes as soon as possible upon completion
(3)	all excavated material must be properly spread landward of the shoreline on the property described on page 1 under "DESCRIPTION" or completely removed from the project site such that erosion and off-site sedimentation of the material is prevented
(4)	dredging must be initiated at both sites after June 30 and be completed by December 31 in any calendar year unless an extension waiver is granted; an extension waiver may be granted by the department upon written request by the licensee to extend a dredging project through January 31 of the subsequent year in order to complete a dredging project that began prior to October 1; an extension waiver may also be granted by the department upon written request by the licensee to extend a dredging project using hydraulic suction through February 28 of the subsequent year in order to complete a dredging project that began prior to November 1; before approving an extension, the department may consider the likelihood of any additional adverse impacts and the likelihood of completion of the project; additional mitigation may be required
(5)	at project site 1, dredging shall not occur lakeward of the northwest end of the channel and no more than 75' lakeward of the eastern end of the channel as noted in the project description; any emergent vegetation within project site 1 must remain undisturbed
(6)	spoils from dredging at project site 3 shall be deposited on an upland site and prevented from eroding into any water body or wetland; remove and properly dispose of any dislodged debris, plants or plant fragments from the lake
(7)	contact the Lakes Permitting Biologist at (260) 244-6805 after installation of the geotubes

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

CERTIFICATE OF APPROVAL
PUBLIC FRESHWATER LAKE

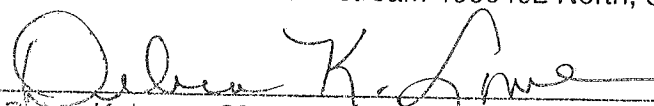
APPLICATION # : PL-21452
LAKE : Westler Lake
APPLICANT : Five Lakes Conservation Association Inc
Robert Christen
PO Box 307
Wolcottville, IN 46795-8946
AGENT : JF New and Associates Inc
John B Richardson
708 Roosevelt Road
Walkerton, IN 46574-1220

MAILED MAR 30 2010

AUTHORITY : IC 14-26-2 with 312 IAC 11

DESCRIPTION : An existing 80' wide by 300' long channel will be restored to its original condition. Two to ten feet of accumulated muck and debris will be removed from the channel bed by excavating to a maximum depth of 10' below the legal level of the lake at the center of the channel and sloping uniformly to a depth of 1 foot or less at the shoreline. The excavated material will be side cast on adjacent upland lots in a contained area for dewatering. Water from the containment area will be allowed to return to the lake through infiltration only. No surface water runoff from the spoils to the lake shall occur. The dried spoils shall be spread evenly across the vacant lots adjacent to the south edge of the channel and then planted to an ornamental lawn. Details of the project are contained in information received electronically at the Division of Water on December 11, 2009 and in plans and information received at the Division of Water on January 19, 2010.

LOCATION : Located at the southwest of County Road and County Road 670 South. The channel is an east-west channel that lies at the outlet of the Frank Hougue Ditch #68 near Valentine, Johnson Township, LaGrange County
Section 29, T 36N, R 10E, Oliver Lake Quadrangle
UTM Coordinates: Downstream 4600402 North, 633183 East

APPROVED BY : 
Debra K. Lowe CFM, Environmental Manager
Division of Water

APPROVED ON : March 30, 2010

Attachments: Notice Of Right To Administrative Review
General Conditions
Special Conditions
Service List

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

GENERAL CONDITIONS

APPLICATION #: PL- 21452

- (1) If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al) and State Law (IC 14-21-1) require that work must stop and that the discovery must be reported to the Division of Historic Preservation and Archaeology within 2 business days.

Division of Historic Preservation and Archaeology
Room W274
402 West Washington Street
Indianapolis, IN 46204

Telephone: (317) 232-1646, FAX: (317) 232-8036

- (2) This permit must be posted and maintained at the project site until the project is completed.
- (3) This permit does not relieve the permittee of the responsibility for obtaining additional permits, approvals, easements, etc. as required by other federal, state, or local regulatory agencies. These agencies include, but are not limited to:

Agency	Telephone Number
LaGrange County Drainage Board	(260) 463-7818
St. Joseph River Basin Commission	(574) 287-1829
Indiana Department of Environmental Management	(317) 233-8488 or (800) 451-6027
Local city or county planning or zoning commission	

- (4) This permit must not be construed as a waiver of any local ordinance or other state or federal law.
- (5) This permit does not relieve the permittee of any liability for the effects which the project may have upon the safety of the life or property of others.
- (6) This permit may be revoked by the Department of Natural Resources for violation of any condition, limitation or applicable statute or rule.
- (7) This permit shall not be assignable or transferable without the prior written approval of the Department of Natural Resources. To initiate a transfer contact:

Mr. Michael W. Neyer, PE, Director
Division of Water
Room W264
402 West Washington Street
Indianapolis, IN 46204

Telephone: (317) 232-4160, Toll Free: (877) 928-3755
FAX: (317) 233-4579

- (8) The Department of Natural Resources shall have the right to enter upon the site of the permitted activity for the purpose of inspecting the authorized work.
- (9) The receipt and acceptance of this permit by the applicant or authorized agent shall be considered as acceptance of the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

SPECIAL CONDITIONS

APPLICATION #: PL- 21452

PERMIT VALIDITY : This permit is valid for 24 months from the "Approved On" date shown on the first page. If work has not been completed by March 30, 2012 the permit will become void and a new permit will be required in order to continue work on the project.

This permit becomes effective 18 days after the "MAILED" date shown on the first page. If both a petition for review and a petition for a stay of effectiveness are filed before this permit becomes effective, any part of the permit that is within the scope of the petition for stay is stayed for an additional 15 days.

CONFORMANCE : Other than those measures necessary to satisfy the "General Conditions" and "Special Conditions", the project must conform to the information received by the Department of Natural Resources on: December 11, 2009 and January 19, 2010. Any deviation from the information must receive the prior written approval of the Department.

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(5)	a silt screen shall be installed immediately lakeward from the dredging site and maintained throughout the dredging project; the applicant and contractor are responsible for removing and properly disposing of any dislodged debris, plants or plant fragments from the lake
(6)	spoils from the dredging project, either hydraulic or mechanical, shall be deposited on an upland site and prevented from eroding into any water body or wetland