Table of Contents

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Milwaukee, Wisconsin
26575 W. Commerce Drive, Suite 601
Volo, Illinois 60073
Phone (847) 740-0888
Fax (847) 740-2888
Chicago, Illinois

February 27, 2020

Ms. Jenny Skufca
Incidental Take Authorization Coordinator
Division of Natural Heritage
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702

Project No.: 19-0131

Re: Godley Public Water District water intake
Kankakee River, Custer Park, Will County, Illinois

Dear Jenny:

On behalf of the Godley Public Water District, we are submitting this response to your comments sent via emails dated February 24, 2020 and October 10, 2020 on the proposed GPWD water intake in the Kankakee River at Custer Park. This also provides a revised ITA/Conservation Plan document that is fully executed by GPWD and a draft Public Notice. We trust this resolves your questions and concerns and await your direction for the Public Notice.

You have requested an item by item disposition of your prior comments and concerns. Therefore, each of your prior comments is reproduced verbatim below, followed by our response.

IDNR February 24, 2020 comments:

1. Comment #4 submitted by the State on October 4, 2019, has not been addressed in Section 1.C. The Department understands, per the bottom of page 7, that a more detailed construction sequence and methods determination will not be made until final engineering plans. However, to fully analyze potential aquatic habitat impact, please confirm in the Plan whether equipment use will occur in-the-dry within the coffer-dammed area or whether there may be a need for a causeway. Please provide language in the Plan that the resource agencies will receive final design plans once they exist.

RESPONSE: We attempted to address the October 10 comments in the revised Conservation Plan sent to you on December 20, 2019. However, we have more specifically and explicitly revised the Plan to address the question of whether equipment will operate in the dry within the coffer-dammed area and whether we anticipate a need for a causeway. We have also provided revised language indicating that IDNR, USFWS, and USACE will receive any final engineering plans, as well as, any contractor-provided shop drawings.

2. Comment #6 of the same date resulted in no change to the Plan, and mitigation is proposed to be provided to the Urban Stream Research Center. Can the USFWS support this as a conservation measure, if the facility does not work on Sheepnose? On a past permit in the Kankakee, the mitigation was provided to Ohio State University due to their work directly with this species. The State is willing to support conservation measures that the USFWS can agree to.

RESPONSE: The Conservation Plan was in fact revised to address this concern in the December 2019 submittal. We added language to specifically address the IDNR desire for studies of water intake impacts to listed species, assuming that was the primary concern, rather than who or where such research might take place. However, in your February 2020 comments it was more explicit that the request was to provide a mitigation donation to the Ohio State University mussel research program where they are working on the sheepnose, rather than the Urban Stream Research Center in DuPage County. The text in the appropriate section of the Conservation Plan has been revised to reflect this request. The USFWS has not commented on this mitigation.

3. Comment #8 of the same date identified an information need under Section 4 of the Conservation Plan. This section must address all species for which take authorization is sought.

RESPONSE: All species for which authorization is sought were added to Section 1 of the Conservation Plan in the December 2019 submittal. Section 4 has been revised to include all nine (9) state-listed species considered in the Conservation Plan.

4. Page 8, Section 1.D., please address potential adverse effects to mudpuppy and how the species will be treated if found, similar to your presentation for mussels and fish.

RESPONSE: The mudpuppy has been more explicitly addressed in Section 1.D of the Conservation Plan.

5. Page 9, Section 2.A.2., please add to the last sentence that the silt curtains will remain in place until after cofferdam removal.

RESPONSE: Section 2.A.S of the Conservation Plan has been revised to include this language.

6. Page 10, Section 2.A.7., and Page 12, Section 2.C.6.; to avoid the spawn of all of the listed fish for which take authorization is sought would encompass May 1 to August 31. As the applicant is requesting a take permit, this is not a requirement. Please ensure that each of these sections (and anywhere else the dates occur) refers to this action as minimization, instead of avoidance. Complete avoidance of all listed fish spawn dates would take out nearly the entire window for work in the river.

RESPONSE: The language in Section 2.A.7 and 2.C.6 has been revised to indicate that work will preferentially be done during low flow conditions, and within the time window specified in the OWR permit issued for the project. But we acknowledge your point that to avoid the spawning period of all fish species of concern for this project would not be practical.

7. Page 10, again Section 2.A.7., my understanding is that the last sentence is referring to work within the coffer-dammed area; therefore, the species would not be at risk, correct? If so, please make this clear to the public reviewers. The installation of the cofferdam, pumping, and relocation are the events of risk during construction to the listed species. If I am misunderstanding, please clarify.

RESPONSE: Your understanding is correct. The intent is to relocate the biota from the work area within the coffer dam, dewater that area and work in the dry. All work would then be restricted to within the coffer dam and thereby reduce risk to any other stream biota. The coffer dam installation, dewatering, and relocation are the events of risk. The text in Section 2.A;7 has been revised to clarify.

8. Page 11, Section 2.A, end of section, as requested in the Department's email of October 24, 2019, please provide a citation to support the relocation efficiency estimate.

RESPONSE: This relocation efficiency estimate is based upon the salvage protocols and efficiency in the USFWS September 26, 2019 comment letter to the GPWD where they report a 90% salvage efficiency. It is also based on Smith 2006, a report on sampling design and efficiency for rare unionid mussels. It conservatively assumes 15% will be missed, likely because they are buried at the time of the salvage operation.

9. Page 11, Section 2.B., please clarify first sentence, excavations will be backfilled utilizing existing substrate or, rather, the applicant anticipates that the riverbed with restore itself naturally. Please state.

RESPONSE: Section 2.B has been revised to address this question about how the riverbed would be restored.

10. Page 12, Section 2.C.5., please address that fish and mudpuppies would also be relocated from cofferdam.

RESPONSE: The relocation of the listed fish and mudpuppies had been addressed in some sections of the Conservation Plan, but the language in Section 2.C.5 has been specifically revised to address this as well.

11. Page 12, Section 2.C.8., please specify that draw-down pumps will utilize fish exclusion mesh when referencing cofferdam dewatering.

RESPONSE: This language about fish exclusion mesh has been added to Section 2.C.8.

12. Page 14, Section 2.E.5., "anchoring equipment" suggests potential impact to a larger footprint. Can this action be performed within the currently presented streambed impact acreage, if necessary?

RESPONSE: Section 2.E.5 language in the Conservation Plan has been revised to more clearly indicate that these contingencies would still be contained within the coffer dam area.

13. Page 20, Section 5, Implementing Agreement, please seek signature on this part of the agreement. This is a promise that the applicant believes that all actions presented in the Conservation Plan are indeed achievable. To deem the Plan complete, it must contain a signature.

RESPONSE: Assuming this will be the last of the substantive revisions to the Conservation Plan, The Implementing Agreement has been executed by the GPWD.

IDNR October 10, 2019 comments:

14. Please include the requested duration of the permit. Is the take authorization requested for construction only or construction and operation? Please state in the Plan.

RESPONSE: The Conservation Plan was revised to clearly indicate a desired 10-year duration of the permit. It is for both construction and operation for this time period and this is also stated in the revised Conservation Plan.

15. The Area of Impact appears quite small for the project type. Please consider adding some reasonable downstream buffer for potential sedimentation impacts to species.

RESPONSE: The Conservation Plan has been revised to include more explicit discussion of the related construction of the raw water pipes and treatment plan, as well as, as 300-foot downstream potential impact zone. Acreages for various components have been provided in the Conservation Plan.

16. Under Section 1.B., pages 2-4, the Department has concern for the potential take of the State-threatened River Redhorse within this proposed project location, and it was identified in the site-specific survey. Please address in the Plan why the fish is not considered in the applicant's risk assessment.

RESPONSE: The river redhorse, along with eight (8) other state-listed species are fully addressed in the revised Conservation Plan.

17. Under Section 1.C., page 4, please provide additional information on anticipated equipment use and staging. Will equipment work from land? Please also define the acronym PCC at first usage (I assume pre-cast concrete).

RESPONSE: The language in Section 1.C has been revised to address this concern. Equipment will work from land, and within the dewatered coffer dam area. PCC does mean pre-cast concrete. Additional details on means and methods cannot be provided until a contractor is selected, at which time it will be provided to the IDNR.

18. Under Section 2.A.9., page7, please define the trigger for filtering pumped water, and/or trigger for need to allow settlement of sediment prior to discharge.

RESPONSE: The Conservation Plan has been revised to include a threshold for additional filtration of dewatering discharge – specifically a 6-inch secchi disk reading.

19. Under Section 2.C., page 9, mitigation for potential take of the 4 mussel species has been scaled to a value of $30,000, based on species status, species trend, project footprint, degree of impact, and estimated take range. Further, the Department is not supportive of the compensatory mitigation application to propagation actions for this project. Research on the potential impacts of river water withdrawals on listed species habitat is a high priority for the Department and preferred use of any compensatory mitigation.

RESPONSE: Thank you for providing this scaling of the mitigation. This has been included in the revised Conservation Plan. As stated above for item #2, the language has been revised to specify support of research at Ohio State University, hopefully focused on the sheepnose, and river water withdrawal impacts to listed species.

20. Under Section 2.D., page 9, the State concurs with most of the USFWS conservation measures identified for mussel salvage, relocation, and monitoring; except with regard to 2.c. where the Department will compel mussel work to occur when water temperatures are above 15°C (59°F) based on research identifying decreased function below this temperature. Please reflect the conservation measures requested in the USFWS 9-26-19 Biological Assessment comment letter in the State's Conservation Plan.

RESPONSE: The Mussel Salvage Plan has been provided with the Conservation Plan that includes this temperature restriction (more restrictive that USFWS), and all other USFWS recommendations. The Mussel Salvage Plan is included in the Conservation Plan by reference as an Appendix. It is also incorporated similarly into the BA submitted to USFWS.

21. Under Section 4, page 12, this section must address all species for which take authorization is sought.

RESPONSE: As mentioned above, Section 4 has been revised to fully address all nine (9) state-listed species potentially affected by this project.

22. Please be aware that per the Department's Section 6 Cooperative Agreement with USFWS under the federal Endangered Species Act, the Department cannot issue take authorization for a federally-listed species until such time that the USFWS has issued an opinion.

RESPONSE: Understood, and this language has been added to the Conservation Plan. A Biological Assessment has been submitted to the USFWS and the U.S. Army Corps of Engineers (federal action agency) to initiate formal consultation under the federal Endangered Species Act. A copy of the resultant Biological Opinion will be provided to the IDNR when received.

I hope this fully addresses all the IDNR concerns and provides a complete Conservation Plan and ITA application package. A draft public notice document has also been provided. Please contact me directly with any further questions you may have.

Sincerely,

Jeffrey L. Mengler, PWS
Senior Project Scientist

cc: S. Cirton, USFWS
T. Gereaux, MG2A
J. Cosgrove, GPWD
B. Cosgrove, GPWD

enclosures

(Illinois Department of Natural Resources
CONSERVATION PLAN

(Application for an Incidental Take Authorization)

Per 520 ILCS 10/5.5 and 17 Ill. Adm. Code 1080

150-day minimum required for public review, biological and legal analysis, and permitting

PROJECT APPLICANT: *Godley Public Water District*
P.O. Box 130
440 S Center Street
Godley, IL 60407

PROJECT NAME: *Kankakee River Water Intake*

COUNTY: *Will*

AREA OF IMPACT: *An area of approximately 0.264 acres of the Kankakee Riverbed and approximately 0.05 acres of wetland on the riverbank will be directly impacted by the water intake. In addition, proposed water pipelines will convey the water from the intake to a treatment station. The proposed pipes will follow Illinois Route 113 north from the intake location to Garfield Street, then west along Scott Street, and finally south along Washington Street. The proposed treatment plant will be located on a parcel of land adjacent to the Custer-Reed Elementary School. This parcel is already disturbed and maintained as mowed turf grass and does not contain any natural habitats. The intake, pump station, pipe route, and treatment plant site total approximately 5 acres. An area up to 300 feet downstream within the river may also receive minor impacts. Thus, the total action area defined in this Conservation Plan totals approximately 8.55 acres. The request is for a ten (10) year Incidental Take Authorization (ITA) to correspond with the 10-year monitoring period.*

The incidental taking of endangered and threatened species shall be authorized by the Illinois Department of Natural Resources (IDNR) only if an applicant submits a conservation plan to the IDNR Incidental Take Coordinator that meets the following criteria:

1. A description of the impact likely to result from the proposed taking of the species that would be covered by the authorization, including but not limited to -

A) Identification of the **area to be affected** by the proposed action, include a legal description and a detailed description including street address, map(s), and GIS shapefile. Include an indication of ownership or control of affected property. Attach photos of the project area.

The project is located on the Kankakee River approximately 4.5 miles upstream from the dam at Wilmington, Illinois. The proposed intake would be approximately 262 feet from the left descending riverbank. The riverbank at this location is owned by the Godley Public Water District (GPWD) and is within Custer Park, Illinois. A project location map is provided as Exhibit 1.

The proposed intake location is in the northwest quarter of section 19, Township 32 North, Range 10 East of the third principal meridian.

The proposed water pipelines that will convey the water from the intake to a treatment station will follow Illinois Route 113 north from the intake location to Garfield Street, then west along Scott Street, and finally south along Washington Street. The proposed treatment plant will be located on a parcel of land adjacent to the Custer-Reed Elementary School. This parcel is already disturbed and maintained as mowed turf grass and does not contain any natural habitats. The intake, pump station, raw water pipe route, and treatment plant site total approximately 5 acres. It should be noted that the transmission pipelines and treatment plant may not be constructed during the same timeframe that the water intake is proposed for construction.

The Kankakee River runs from its origin near South Bend, Indiana to the confluence with the Des Plaines River near Channahon, Illinois. Flowing for a total of 59 miles in Illinois, the Kankakee River contains three (3) dams and twelve (12) larger tributary streams, including the Iroquois River. The upper river is low gradient, running through the Momence wetlands. Downstream the Kankakee River gradient increases, flowing over bedrock and cobble through the Kankakee River State Park and past Wilmington, joining the Des Plaines to form the Illinois River.

Photographs of the river at the project location are provided as Appendix B within the EnviroScience report dated October 11, 2018 included as Attachment 1. GIS shapefiles of the project location are provided as a separate zip file.

B) **Biological data** on the affected species including life history needs and habitat characteristics. Attach all biological survey reports.

This Conservation Plan addresses the federally and state-endangered sheepnose (Plethobassus cyphyus), and the state threatened purple wartyback (Cyclonaias tuberculata), black sandshell (Ligumia recta), and spike (Elliptio dilatata) freshwater mussels. In addition, it addresses the state-listed pallid shiner (Hybopsis amnis), river redhorse (Moxostoma carinatum), western sand darter (Ammocrypta clarum), weed shiner (Notropis texanus), and the mudpuppy (Necturus maculosus). Other federally listed species known from Will County are addressed briefly in a revised Biological Assessment prepared for submittal to the U.S. Fish and Wildlife Service.

This reach of the Kankakee River had been surveyed for freshwater mussels by Price, et al. (2012), and two of their survey sites were located 4.5 miles and 9 miles downstream from the present project site. EnviroScience, Inc. 2016 & 2018 also completed three surveys near the project site. Two were 8 miles and one was 9.3 miles downstream of the project site. Based on both living and fresh dead mussel species reported from these nearby sites, a total of 24 mussel species were potentially within the project area.

EnviroScience also conducted a survey for freshwater mussels and fish within the project area of the Kankakee River in August and September 2018 on behalf of the Godley Public Water District (GPWD). Their report dated October 11, 2018 is provided as Attachment 1 which includes a detailed description of their methods which were reported as reviewed and approved by the IDNR and USFWS.

Overall, a total of 4,938 living mussels and 24 species were detected. Fresh dead and weathered dead shells contributed two additional species. The state-threatened purple wartyback and black

sandshell were detected throughout the survey area. Fourteen live sheepnose were found scattered in the survey area. A single state-threatened Spike was collected near the right descending bank.

Sheepnose (Plethobasus cyphyus)

The sheepnose is listed as federally endangered by the USFWS and as state-endangered in Illinois. This is a medium-sized freshwater mussel that grows to about 5 inches in length. The shell is very thick and hard with an overall shape slightly longer than wide, and somewhat inflated. The shell is smooth, shiny, and light yellow to dull yellowish brown, without lines or rays, but with dark concentric ridges.

The sheepnose is found across the Midwest and in the southeastern United States, however, it has been eliminated from two-thirds of the streams from which is was historically known (USFWS web page https://www.fws.gov/midwest/Endangered/clams/sheepnose/index.html*).*

Male sheepnose release sperm into the river which are then taken in by females when they siphon for food. The fertilized eggs develop into glochidia within their gill chambers. Sheepnose glochidia are then expelled in conglutnates that are narrow, red or pink, and discharge in an unbroken line. These are ingested by fish and the glochidia then attach to the fish gills where they develop into juvenile mussels. The only confirmed wild host for the sheepnose is the sauger (Stizostedion canadense), although laboratory studies have successfully transformed sheepnose glochidia on fathead minnow (Pimephales promelas), creek chub (Semotilus atrromaculatus), central stoneroller (Campostoma anomalum), and brook stickleback (Culaea inconstans)(USFWS 2019 fact sheet).

Sheepnose mussels live in larger rivers and streams where they are usually found in shallow areas with moderate to swift currents that flow over coarse sand and gravel. However, they have also been found in areas of mud, cobble, and boulders, and in larger rivers they may be found in deep runs. Sheepnose adults are suspension feeders that siphon water and feed on suspended algae, bacteria, detritus, and other zooplankton.

Purple Wartyback (Cyclonaias tuberculata)

The purple wartyback is listed as threatened in Illinois and is generally widespread but uncommon across the Midwest. It also is known by the names Missouri mapleleaf, purple pimpleback, and deerhorn.

Purple wartybacks have a rounded shell that is moderately thick and compressed to moderately inflated. The anterior end is rounded while the posterior end is somewhat squared off. The dorsal margin is straight with a wing present behind the umbo, and with a curved ventral margin. The umbos are low even with, or barely rising above the hinge line. The shell surface, except the anterior fourth, is covered with tubercles, forming small ridges on the dorsal wing. Periostracum is yellowish brown or greenish brown in young shells, becoming dark brown in older shells. It is a medium sized mussel to 5 inches in length.

They typically inhabit medium to large rivers in gravel, cobble, or mixed sand and gravel with slow to moderate current. Black bullhead (Ameiurus melas), Yellow bullhead (Ameiurus natalis),

flathead catfish (Pylodictis olivaris) and channel catfish (Ictalurus punctatus) are host fish for this species which breeds in May through July.

Black Sandshell (Ligumia recta)

The state-threatened black sandshell is a large mussel up to 9 inches in length, with a smooth, elongate shell ranging in color from dark green or brown to black. Green rays are sometimes visible. This species has a low, broad beak, pointed posterior and rounded anterior ends, straight dorsal margin and ventral margin straight to moderately curved. The nacre is whitish-pink to purple. The anterior end is rounded, the posterior end is pointed in males and saber-shaped in females. The dorsal margin is straight, while the ventral margin is straight to curved. The umbos are low, only slightly elevated above the hinge line. The beak sculpture, if visible, is of two or three indistinct, double-looped bars. Pseudocardinal teeth are triangular, serrated, and divergent; two in the left valve, one in the right, occasionally with a small tooth anteriorly. Lateral teeth are long, moderately thin, and straight. Beak cavity is shallow.

They inhabit medium to large rivers in riffles or raceways in gravel or firm sand.

Metamorphosis of glochidia and natural glochidial infestations of the black sandshell have been observed for bluegill and white crappie. In lab trials, glochidia have metamorphosed on several other fish, including the banded killifish, white perch, central stoneroller, redfin shiner, rosyface shiner, redbreast sunfish, green sunfish, longear sunfish, orange-spotted sunfish, pumpkinseed, rock bass, largemouth bass, walleye and yellow perch.

Spike (Elliptio dilatata)

The spike, also sometimes known as the lady finger, is listed as threatened in Illinois. It is a smaller freshwater mussel with a shell up to 5 inches in length. It has a shell that is solid, elongate, elliptical, and compressed to moderately inflated. The anterior end is rounded; the posterior end is rounded to slightly pointed. The dorsal margin is straight to slightly curved, the ventral margin is straight to curved in young shells, becoming arched in older shells. The umbos are low, usually not elevated above the hinge line. The beak sculpture, if visible, consists of three or four heavy loops. The shell has a smooth surface, greenish brown in color with faint green rays visible on small shells, becoming dark brown to black in adults.

Pseudocardinal teeth are well developed; two in the left valve, one in the right. Lateral teeth are short, roughened, and straight. The beak cavity is very shallow. The nacre is variable, most often purple, occasionally pink or white.

It is a species of small to large streams and occasionally lakes in mud or gravel in Illinois. It is considered widespread but sporadic in distribution. It is common in Missouri and Ohio, uncommon to rare in other states. Duncan and Eckert (2009) confirmed the following glochidial hosts for the spike: largemouth bass (Micropterus salmoides), rock bass (Ambloplites rupestris), and black or Holston sculpin (Cottus baileyi).

Pallid Shiner (Hybopsis amnis)

The pallid shiner has a pale olive yellow back, silvery sides, silvery white belly, and fins that are unpigmented. The adult length is about 2 inches. Their habitat is medium to large rivers and streams, often at the end of sand and gravel bars. They are also found over sand and mud in shallow, slow-moving, moderately clear, warm and well-oxygenated waters in impoundments with little or no current. They are thought to spawn in late winter, early spring in the south, but little is known about their spawning in the upper Midwest (WDNR, Nature Serve).

It is state-endangered in Illinois. It was not detected in the fish survey in 2018 by EnviroScience within the project area, however, they indicate it is likely to be found in the vicinity. The IDNR has seemingly concurred and recommended that it be included in this Conservation Plan.

River Redhorse (Moxostoma carinatum)

The river redhorse may be 10 to 27 inches in length with back and upper sides that are green-brown, while the remainder of each side is yellow. The belly is white. The dorsal fin is green-brown or blue-gray. The lower body fins are plain or with an orange tint. The tail fin is red. Dark spots can be seen on the scale bases of the back and sides. The river redhorse has a large head and a large mouth.

The river redhorse may generally be found in the northern one-third of Illinois, the upper Mississippi River and the Ohio River. It lives in the deep, swift, gravel riffles of rivers. It is intolerant of silt, turbidity and pollution. Spawning occurs in spring. The male excavates a nest in the gravel on the river bottom. The female and a second male come to the nest. Both males fertilize the eggs. The action of all three fish stirs the eggs into the gravel. The river redhorse eats mollusks and aquatic insects. The river redhorse is threatened in Illinois mainly due to habitat degradation.

Western Sand Darter (Ammocrypta clarum)

The slender western sand darter is about two to three inches in length. Its back is yellow-brown, while the sides and belly are silver-white, and the fins are colorless. This species has few markings except for some dots along the lateral line, dark outlines of a few scales above the lateral line and a dark mark on the snout. A needlelike spine projects backward from the gill cover. A few rows of scales along the lateral line are the only scales present on this darter. The two dorsal fins are completely separated.

In Illinois, the western sand darter may be found in the Mississippi, Kankakee and Kaskaskia rivers. It lives in sand areas in the rivers. It is intolerant of siltation and turbidity and avoids strong currents. Nocturnal, it buries itself in sand during the day. Spawning occurs in summer. The western sand darter feeds along the bottom, eating immature aquatic insects. This species is listed as endangered in Illinois and has been harmed by siltation, impoundments and poor water quality.

Weed Shiner (<u>Notropis</u> <u>texanus</u>)

The weed shiner is Illinois-endangered, and averages about two to three and one-half inches in length. It has a yellow-brown back. The sides and belly are silvery. There is a black stripe on the side that extends from the base of the tail to the tip of the chin. A light-colored stripe can be seen just above the dark band. A dark stripe is also present in front of the dorsal fin. The breeding male has red pigment in the fins and tubercles (bumps) on the head, front of the body and the pectoral fins.

The weed shiner may be found in the northern one-third of Illinois, mainly in the Kankakee River in Kankakee and Iroquois counties and the Green River. It prefers sand-bottomed areas with some aquatic plants. Spawning occurs in summer. Approximately 300 to 400 eggs are deposited. The weed shiner swims in schools at middle water depths, often with other minnows. Its food habits are not well understood. This fish lives for about two to three years.

Mudpuppy (<u>Necturus</u> <u>maculosus</u>)

This is a large stout-bodied brownish gray, rust brown, or black salamander with scattered round black spots of various sizes. They have a gray belly with dark spots, or plain gray. Their snout is blunt, the head flattened and widest behind eyes. They have a short tail with tail fins not extending onto body. Larva and juvenile individuals have broad dark stripes down back that are bordered on either side by yellow stripes.

Mudpuppy habitat consists of lakes, ponds, rivers, and large creeks. They tend to be more abundant in clear waters but can withstand turbid, mud-banked streams if gravel headwaters are available for reproduction. This salamander is active year-round and shelters by day in deeper water under rocks, piles of driftwood, overhangs, and other objects. They feed at night on fish, crayfish, aquatic insects, and other invertebrates. Males search out females in autumn and mate in depressions under large rocks, logs, boards, or other submerged objects. Females attach eggs to the underside of rocks or logs the following spring. Larvae hatch in 1-2 months and mature in 5-6 years. It is listed as state-threatened in Illinois.

C) **description of project activities** that will result in taking of an endangered or threatened species, including practices to be used, a <u>timeline</u> of proposed activities, and any permitting reviews, such as a USFWS biological opinion or USACE wetland review. Please consider all potential impacts such as noise, vibration, light, predator/prey alterations, habitat alterations, increased traffic, etc.

The GPWD has proposed the construction of water withdrawal infrastructure on the bank of and within the channel of the Kankakee River to withdraw up to 30 million gallons of water per day subject to the permit conditions in permit NE2019007 granted by IDNR Office of Water Resources. The proposed intake infrastructure includes:

- *An underground 122-foot diameter PCC (precast concrete) wet well (manhole)*
- *4 X vertical turbine pumps installed in the wet wells with surface mounted motors*
- *2 X underground 10-foot diameter PCC valve vaults (manhole)*

- *A retaining wall to support an access drive and maintenance loading area*
- *Underground raw water discharge pump*
- *A high-level intake with screening system*
- *A low-level intake pipe with full barrel screen intakes*

This infrastructure in the Kankakee River will be constructed within a 0.264-acre coffer dammed work area (in the dry). Most of the facilities will be constructed at or below the existing riverbed elevation. The only infrastructure above the existing ground elevation will be the three 42-inch diameter half-barrel screen intakes. The top of these intakes will be 27-inches above the riverbed. The intakes will be placed parallel to the channel flow, have a cross-section of 8 square feet each and up to 12 feet in length.

The detailed construction sequence and methods will be determined once the final engineering design is completed and a contractor is selected. Final engineering design plans will be provided to the IDNR, USFWS, and USACE when they are completed. Specific means and methods, such as equipment type, are not determined until qualified bids are received, and a contractor selected. If shop drawings are produced by the selected contractor for this project, they will be submitted to the IDNR for review prior to implementation of the project.

It is the intent and design that all equipment would enter the work area from dry land on the riverbank and operate within the coffer dam once the coffered area has been dewatered. It is anticipated that due to groundwater inputs pumps may need to run intermittently or continuously to maintain a safe, dewatered work area. All practices will be in accordance with the Illinois Urban Manual latest edition. A causeway within the coffer dam is not anticipated, but if site conditions prove otherwise, plans for any causeway placement will be submitted to the IDNR and be consistent with the Causeway standard in the Illinois Urban Manual.

Detailed plan sheets and the OWR permit are provided as Attachment 2.

A Biological Assessment is being submitted to the USFWS to initiate section 7 consultation for the sheepnose concurrently with submittal of this ITA application. It is acknowledged that under Illinois law, the USFWS must issue its BO with the associated take authorization prior to any State Incidental Take Authorization for species that are federally, and state listed such as the sheepnose.

It is also anticipated that a section 404 Clean Water Act and a section 10 Rivers and Harbors Act permit may be needed from the U.S. Army Corps of Engineers Chicago District for this project.

The GPWD anticipated timeline is as follows:

1) *IDNR-OWR Permit issued - 02/28/2019*
2) *IDNR and USFWS Take Permit revised applications submitted – 12/31/2019*
3) *IDNR and USFWS Take Authorizations – 3/27/2020*
4) *Final Design consultant starts - 04/1/2020*
5) *Final Engineering Design completed - 02/1/2021*

6) *Award contractor bid - 03/14/2021*
7) *Construction start - 03/28/2021*
8) *High water intake + wet well - 08/28/2021*
9) *Filter intake start - 08/02/2021*
10) *All structures and piping completed, and stream bed restored - 02/28/2022*
11) *All equipment installed. Inspections completed and permits closed - 09/30/2022*
12) *Raw water pipes and treatment plant constructed in disturbed upland locations – 2022-2025*

D) Explanation of the anticipated **adverse effects on listed species**; how will the applicant's proposed actions impact each of the species' life cycle stages.

It is anticipated that this work will cause potential impacts to any stream biota in the stream within and around the 0.264-acre work area, including the 4 listed mussel species, 4 listed fish species, and one listed amphibian species. A Mussel Salvage Plan (Attachment 3) will be implemented to remove all mussels from the work area and translocate them to suitable habitat upstream of the work area within the Kankakee River. This translocation effort will be guided by IDNR biologists and mussels will be placed in known mussel beds upstream of the project to reduce potential impacts from sedimentation during construction activities following the protocols in the Mussel Salvage Plan included as Attachment 3.

Potential impacts to all life stages of these 4 listed mussel species would come from temporary suspension of fine sediments, potential direct impact from equipment during construction to any individuals missed during the relocation, and potential downstream impacts from sedimentation/siltation. Once the infrastructure construction is completed and the coffer dam removed, mussels are expected to recolonize the work area from adjacent mussel populations, including the listed species.

There is also potential impact to these listed mussel species from the water intakes once operational via entrainment and/or impingement on the intake structure. However, the OWR permit sets forth conditions designed to avoid and minimize this impact (see sections on avoidance and minimization below).

Potential impacts also include adverse effects to the host fish species for each of these listed mussels via the activities and impacts described above.

In addition, there are the four listed fishes and one amphibian species that could occur in the project area during construction and operation. Once the work area for the intake construction is surrounded by a coffer dam, a fish and amphibian salvage operation will be implemented using electroshocking, dip netting, and seining to recover fish and mudpuppies trapped within the work area and relocate them to suitable habitat downstream of the intake location. This will be coordinated with IDNR Fisheries staff and herpetological experts as appropriate. All fish will be identified to species and numbers estimated before relocation. Any amphibians will also be identified to species and numbers estimated before relocation. They will be held in aerated tanks

for the minimum amount of time possible. This will reduce impacts to listed and host fish species, and to the mudpuppy, during the intake construction, however, it is acknowledged some take may occur especially during coffer dam installation.

Impacts may also occur to fish, mussel, and amphibian eggs that may be in or on the river bottom. The area of direct impact from construction has been kept to the smallest area possible to minimize this impact, however, it is acknowledged that siltation impacts could occur up to 300 feet downstream.

2) Measures the applicant will take to minimize and mitigate that impact and the funding that will be available to undertake those measures, including, but not limited to -

A) plans to **minimize the area affected** by the proposed action, the estimated **number of individuals** of each endangered or threatened species that will be taken, and the **amount of habitat** affected (please provide an estimate of area by habitat type for each species).

The area of direct disturbance to the riverbed has been kept to the minimum necessary to construct the intake – 0.264 acres. This area will be defined by the placement of a coffer dam to allow dewatering of the work area. The type of coffer dam used will be determined by the contractor but will consist of non-erodible material or structures (e.g. sheet pile, A-frame structure dam). This helps minimize any impacts to the mussel beds, fish, and river bottom habitat outside of this small work area during construction. The area of habitat temporarily impacted by this defined work area is the same for all the listed species considered in this plan. It is acknowledged and discussed further below that there may be some indirect impacts to mussel beds and fish downstream of the proposed water intake.

To further avoid and minimize impacts to the Kankakee River within the project area and to avoid or minimize the take of listed species, the following best management practices will occur:

1. *Because avoiding any temporary or permanent impacts to the Kankakee River was not practicable, the area of disturbance has been minimized to the smallest area needed for construction purposes.*

2. *Erosion and sediment control measures will be implemented to avoid sediment runoff into the Kankakee River. Erosion control measures will adhere to those presented in Illinois Department of Transportation (IDOT) Bureau of Design and Environment (BDE) Design Manual, IDOT's 2016 Specifications and Standards for Bridge and Road Construction, and the Illinois Urban Manual, latest revision. This will include silt curtains around the work areas within the river channel during all construction activities. These measures will be in place before the coffer dams are installed and will remain in place until after cofferdam removal.*

3. *In-stream activities during construction will be kept to the minimum necessary to safely construct the water intake infrastructure. Cofferdams and dewatering will be used as depicted on the plans in Attachment 2 in accordance with the Illinois Urban Manual (latest edition) and any USACE permits issued for the project. No bypass or pump around is anticipated.*

4. *Worker awareness training, consisting of a pre-construction briefing, will be provided by a qualified environmental professional to help minimize and avoid impacts. This will include*

procedures to notify IDNR and USFWS, and a qualified environmental professional if any live mussels are encountered during construction activities.

5. *Prior to construction or any in-stream work, a mussel salvage plan will be implemented to relocate all mussels from within the defined 0.264-acre work area to a suitable habitat location upstream of the work area. Please see the mussel salvage plan included as Attachment 3.*

6. *Once the work area for the intake construction is surrounded by a coffer dam, a fish and amphibian salvage operation will also be implemented using electroshocking, dip-netting, and seining to recover fish and amphibians trapped within the work are and relocate them to suitable habitat downstream of the intake location. This will be coordinated with IDNR Fisheries staff as appropriate. All fish and amphibians will be identified to species and numbers estimated before relocation. They will be held in aerated tanks for the minimum amount of time possible.*

7. *In-stream construction activity will occur during low flow conditions as much as practicable to minimize impacts from dewatering operations by reducing the time needed to complete the dewatering of the work area. Once the coffer dammed area is dewatered and the aquatic biota are relocated, work will occur in the dry within the coffer dam-protected work area. It will not be possible to avoid the spawning season for all species considered under this ITA, but this work area protected by the coffer dams will avoid impacts to biota in the river outside of the dewatered work area.*

8. *To avoid and minimize entrainment and impingement of aquatic organisms on the intake structure, intake velocities will not exceed 1.5 feet per second and screen openings will not exceed 0.5 inches, as specified in the IDNR-OWR permit.*

9. *Under the terms of the IDNR-OWR permit, water withdrawal may occur only when the flow in the Kankakee River is above 600 cubic feet per second (CFS) as determine from the data collected at the U.S. Geological Survey (USGS) stream gage station at Wilmington, Illinois to minimize impacts on the aquatic biota of the river. For comparison, the average daily flow in the Kankakee River at Wilmington since 1934 is 4908 CFS, while the low flow is 471 CFS. Low flow is the "flow of water in a stream during prolonged dry weather," according to the World Meteorological Organization and typically in Illinois the 7Q10 value is used (the lowest 7-day average flow that occurs on average once every 10 years) to define low flow.*

10. *Turbidity monitoring will be used to demonstrate that the cofferdams and silt curtains are functioning as intended to contain re-suspended sediment and minimize downstream transport of sediment. This will entail visual observations and in-situ turbidity measurements to demonstrate that the controls are functioning as intended. The water pumped from within the cofferdams may need to be filtered or re-suspended sediment allowed to settle out of the water column prior to discharge to the river to prevent turbidity impacts to fishes and other aquatic life in the vicinity of the construction site. The need for filtration or a settling tank depends in part on the substrate within the work area. If little fine sediment is encountered as expected, then turbidity monitoring would likely be sufficient. Any dewatering discharge will be pumped through a filter sac. If secchi disk readings exceed 6 inches below the discharge, then additional filtration such as a frac tank will be implemented.*

11. *Construction of the infrastructure on the south riverbank will follow all terrestrial soil erosion and sediment control best practices, including appropriate sediment barriers along the edge of the river. All work will be done from the landward side of this site and not from the river to construct the land-based infrastructure and follow the standards in the Illinois Urban Manual.*

12. *The proposed water transmission pipes will follow existing roadways and not disturb any natural habitat areas. All appropriate soil erosion and sediment control measures will be followed and maintained.*

13. *The proposed water treatment plant is located at an upland location on previously disturbed ground. All appropriate soil erosion and sediment control measures will be followed and maintained.*

The total number of mussels within the work area, or area of direct impact, was estimated at 21,000 in the EnviroScience 2018 study. Of this total, 1952 were purple wartyback, 8 sheepnose, 544 black sandshell, and 0 spike (spike were found nearby but not within the work area). The relocation effort would attempt to move all of these individuals to the upstream suitable location. Based on the USFWS September 26, 2019 comment letter, in which they report at 90% salvage efficiency (page 4, section 2.b.), it is conservatively estimated that as many as 15% of these individuals may be missed during the relocation or suffer stress or mortality during relocation. This is also based on Smith 2006, a report on sampling design and efficiency in detecting rare unionid species. The only way to achieve 100% efficiency/detection is to excavate the riverbed to capture individuals that are burrowed in; however, this would obviously result on other impacts to the habitat and biota of the river. The Mussel Salvage Plan and these assumptions would result in an estimated potential take of up to 293 purple wartyback, 1 sheepnose, 82 black sandshell, and 1 spike.

B) **plans for management of the area** affected by the proposed action that will enable continued use of the area by endangered or threatened species by maintaining/re-establishing suitable habitat (for example, native species planting, invasive species control, use of other best management practices, restored hydrology, etc.).

Once the construction of the intake infrastructure is completed, the riverbed will be restored with the same material as prior to construction, described as sand, gravel, and cobble in the EnviroScience 2018 report. Any excavations will be backfilled with the native riverbed material. Once this has been completed, it is anticipated that the riverbed will fully restore itself naturally. The only infrastructure above the existing riverbed elevation will be the three 42-inch diameter half-barrel screen intakes. The top of these intakes will be 27-inches above the riverbed. The remaining area within the work zone will be restored and allowed to recolonize as mussel habitat. There will be no long-term water quality or riverbed impacts from this project. The intake velocity and screen size have been selected and designed to minimize any entrainment or impingement during operations. The permit does not allow the intake to function during extreme low flow time periods. Therefore, these listed mussel species will be able to recolonize and thrive in this section of the Kankakee River after this project is completed.

C) description of **all measures to be implemented to avoid, minimize, and mitigate** the effects of the proposed action on endangered or threatened species.

- Avoidance measures include working outside the species' habitat.
- Minimization measures include timing work when species is less sensitive or reducing the project footprint.
- Mitigation is additional beneficial actions that will be taken for the species such as needed research, conservation easements, propagation, habitat work, or recovery planning.
- It is the applicant's responsibility to propose mitigation measures. IDNR expects applicants to provide species conservation benefits 5.5 times larger than their adverse impact.

The following measures will be implemented to avoid, minimize and mitigate any potential effects on the listed species.

1. *Completely avoiding temporary impacts to Kankakee River was not practicable due to the fundamental nature of the project (a water-dependent project); the area of disturbance within the river is the minimum needed for construction purposes.*
2. *Erosion and sediment control best practices, such as floating silt curtains, will be implemented to avoid and minimize sediment runoff into the Kankakee River as needed during construction.*
3. *In-stream activities during construction will be kept to the minimum necessary to safely construct the water withdrawal infrastructure to minimize impacts.*
4. *Worker awareness training, consisting of a pre-construction briefing, will be provided by a qualified environmental professional to help minimize and avoid impacts.*
5. *Prior to construction or any in-stream work, a Mussel Salvage Plan will be implemented to relocate all mussels from within the defined 0.264-acre work area to suitable habitats outside of the limits of construction and upstream of the project. The specific timing of the relocation will be dependent on water temperatures and water levels in the river in accordance with the Mussel Salvage Plan.*
6. *Similarly, all fish and amphibians, including the mudpuppy, will be relocated out of the 0.264-acre coffer dammed area prior to any work commencing. This will be done with electrofishing, dipnets, and seine hauls throughout the dewatering process to maximize efficient capture and relocation of all fish and amphibians.*
7. *In-stream construction activity will occur only outside of the period April 1 through June 30 as specified in the IDNR-OWR permit as practicable, to avoid and minimize impact during the spawning season for fish that are host species for the listed mussels or be state-listed fish species. It is recognized however that it is not possible to avoid the spawning times of all fish species of concern at this location, meet the temperature and flow requirements, and be able to complete the construction.*
8. *The water temperature and other conditions as specified in the Mussel Salvage Plan will also restrict when this work can occur and minimize impacts to listed species.*

9. *Fish exclusion mesh will be used on all dewatering pump intakes.*

10. *Cofferdams will be used to define and dewater a construction area separated from the river flow. Cofferdams will be constructed of non-erodible material or structures such as A-frame dam structures, sheet-pile, or water-filled bladder dams.*

11. *Floating silt curtains and other best practices will be in place prior to the installation of the cofferdam to limit the sedimentation/siltation impacts.*

12. *To avoid and minimize entrainment and impingement of aquatic organisms on the intake structure, intake velocities will not exceed 1.5 feet per second and screen openings will not exceed 0.5 inches, as specified in the IDNR-OWR permit.*

13. *Under the terms of the IDNR-OWR permit, water withdrawal may occur only when the flow in the Kankakee River is above 600 CFS as determine from the data collected at the USGS stream gage station at Wilmington, Illinois to minimize impacts on the aquatic biota of the river. For comparison, the average daily flow in the Kankakee River at Wilmington since 1934 is 4908 CFS, while the low flow is 471 CFS. Low flow is defined as the "flow of water in a stream during prolonged dry weather," according to the World Meteorological Organization and typically in Illinois the 7Q10 value is used (the lowest 7-day average flow that occurs on average once every 10 years) to define low flow.*

14. *Turbidity monitoring will be used to demonstrate that the cofferdams and silt curtains are functioning as intended to contain re-suspended sediment and minimize downstream transport of sediment. This will entail visual observations and in-situ turbidity measurements (secchi disk) to demonstrate that the controls are functioning as intended. The water pumped from within the cofferdams will be filtered by a filter sac. If secchi disk readings exceed 6 inches, re-suspended sediment will be allowed to settle out of the water column using frac tanks or temporary sediment basins on shore prior to discharge to the creek to prevent turbidity impacts to fishes and other aquatic life in the vicinity of the construction site. The need for filtration or a settling tank depends on the substrate within the work area. If little fine sediment is encountered as expected, then turbidity monitoring would likely be sufficient.*

15. *As compensatory mitigation for any potential impacts to the purple wartyback, black sandshell, spike, and sheepnose mussels a contribution of $30,000 to the mussel research program at Ohio State University will be made for the conservation benefit of these species. There is a desire that this work would specifically address impacts from water withdrawals to listed species such as the sheepnose.*

D) plans for **monitoring** the effects of the proposed actions on endangered or threatened species, such as species and habitat monitoring before and after construction, include a plan for follow-up reporting to IDNR.

A qualified malacologist will conduct post-construction follow-up at the intake area, and at the translocation site. Post-construction and relocation monitoring will be conducted for 10 years and will include surveys every other year after relocation (years 2, 4, 6, 8, and 10). The monitoring protocol for the site will be in general accordance with the approach used for the initial mussel

surveys but only quantitative and qualitative methods (no transect searches). Monitoring of relocated mussels will include searches for PIT (passive integrated transponder)-tagged individuals from the initial relocation effort. At least 50% of PIT tagged individuals will be excavated, recovered, checked for mortality, measured, and replaced into the substrate. Results of % recovery and mortality will be reported within 45 days of each monitoring event.

E) **Adaptive management practices** that will be used to deal with changed or unforeseen circumstances that effect on endangered or threatened species. Consider environmental variables such as flooding, drought, and species dynamics as well as other catastrophes. Management practices should include contingencies and specific triggers. Note: Not foreseeing any changes does not quality as an adaptive management plan.

1. *Siltation during all phases of construction will be minimized by isolating the in-river construction area with cofferdams and floating silt curtains. The project will also use proper soil erosion and sediment control measures for riverbank work such as silt fences to prevent sediment from entering the river and affecting mussel habitat. Regular inspections and maintenance of all silt fences, silt curtains, and other erosion control structures will ensure proper maintenance and functions. If site inspections show that the measures in place are not functioning or are not adequate, different or additional measures will be added.*

2. If secchi disk readings outside the work area exceed 6 inches, settling best practices such as frac tanks will be deployed to reduce siltation/sedimentation of the river habitat.

3. Mussels will be collected from the project area and relocated to suitable habitat upstream of the project area using approved methods for handling mussels with minimal stress. This will be done in accordance with the Mussel Salvage Plan (Attachment 3) which is based upon the best practices recommended by USFWS and IDNR. If any observations during the salvage operation suggest that additional measures are needed, these will be proposed and implemented by appropriately trained personnel. If the identified relocation site proves unsuitable or unfeasible, a different suitable habitat area will be identified with assistance from biologists with the IDNR, USFWS, and others.

4. After construction is completed, cofferdams will be removed and the stream bottom will be restored to its approximate original condition and flow pattern, allowing for re-colonization of biota. Monitoring and observations will be used to guide these restoration activities following adaptive management principles.

5. The contractor will be responsible for having contingency plans for high water/flood conditions should they occur during construction such that further damage to habitat is minimized. This will include anchoring equipment, storing supplies and equipment on high ground and measures to ensure trapped sediment is not released into the waterway. All contingencies will be contained to the coffer dammed work area within the river.

6. If unforeseen observations pertaining to listed species arise, coordination with IDNR and USFWS staff will be immediately sought and appropriate actions implemented.

F) Verification that **adequate funding** exists to support and implement all mitigation activities described in the conservation plan. This may be in the form of bonds, certificates of insurance,

escrow accounts or other financial instruments adequate to carry out all aspects of the conservation plan.

*The **Godley Public Water District** serves as a hub for organizing water providers in its region. The District successfully organized an informal group named the Kankakee River Valley Tri-County Water Collaborative in 2009 which gained the support of the Will and Grundy County leadership, and the State of Illinois. The District has since worked toward a more formal alliance known as the Kankakee River Valley Water Planning Area Alliance. This Alliance is bound by an intergovernmental agreement that sets out membership and executive committee responsibilities and powers. Current signatories to the Alliance include GPWD, City of Braidwood, Village of Diamond, and Coal City. Will and Grundy Counties are anticipated to join the alliance as well.*

One strength of the GPWD is that it had no interests conflicting with regional municipalities and other stakeholders because its sole function is to provide safe, reliable, and affordable water. GPWD constructed over $7M of water infrastructure to provide water to unserved homes in Will and Grundy Counties. The GPWD maintains a high level of service under tight fiscal constraints using the USEPA asset management tool CUPSS. This tool helps assure the water district identifies life cycle costs and benefits, follows current maintenance practices, and is financially prepared for future capital investment.

***Kankakee River Valley Tri-County Water Collaborative** is an informal group of water providers cooperating to better serve their region. This group includes GPWD, Braceville, Coal City, Diamond, Braidwood, and Essex. Shortly after formation in 2009, the collaborative received support from the chief executive and boards of Grundy and Will Counties, the Governor's office, local legislators, Exelon, and several local fire protection agencies. One key purpose of the collaborative is to promote and achieve common goals. Their current and long-term focus includes connecting member community water systems, gaining access to the sustainable and abundant water supply of the Kankakee River, and delivering that water to the region.*

***Kankakee River Valley Water Planning Area Alliance**, as stated above, is a collection of local units of government that have executed an intergovernmental agreement. The agreement is designed to recognize, plan for, and mitigate the effects of urbanization and growth on water supplies and water demand in the Alliance's region. The Alliance members currently rely on underground aquifers for which demand is outpacing recharge. In addition, the use of this groundwater results in the need to collect and dispose of radio nuclides as a byproduct of treatment. The Alliance members recognize the long-term need to plan water supplies in a sustainable and logical manner based on the source and type of water use. Specifically, the Alliance supports this water intake project being pursued by GPWD.*

The financial resources needed to carry out this project are already in place and held by the GPWD to implement the priorities of the Alliance.

3) A description of alternative actions the applicant considered that would reduce take, and the reasons that each of those alternatives was not selected. A "no-action" alternative" shall be included in this description of alternatives. Please, describe the economic, social, and ecological tradeoffs of each action.

The No-Action alternative would leave the existing water sources for the communities and residents of the area in place. This existing water source is being depleting faster than it is being recharged and would ultimately lead to potable water shortages in the area. In addition, the costs for treatment of the groundwater, high in radium, would continue to escalate over time and generate radioactive waste as a biproduct. This is not seen as a sustainable alternative.

The GPWD considered locations that were proximate to the service area of the District and other members of the Kankakee River Valley Water Planning Area Alliance. The Kankakee River has a somewhat east-west alignment upstream of Custer Park and a north-south alignment between Custer Park and Wilmington. This results in other potential withdrawal locations gaining significant distance from the service area located upstream of Custer Park.

The GPWD considered the following as the desirable conditions for an intake location:

1) ***Reasonable proximity to the service area.***
   This condition focused site selection on areas between Custer Park and Wilmington

2) ***Reasonable depth during normal seasonal low flows.***
   This condition focused the site selection upstream of a man-made or natural stream bed "ridge" near Lakewood Drive and Trout Street in Wilmington

3) ***Reasonable access for infrastructure construction.***
   This condition focused the site selection to areas with relatively steep banks, and away from wide flat areas subject to flooding or with wetlands.

4) ***Avoiding Upstream Industrial Discharge.***
   This condition focused site selection upstream of the Exelon facility blow down line.

These desirable conditions led the district to seek a withdrawal location near Custer Park and purchase the site for which the IDNR-OWR has granted a withdrawal permit.

4) Data and information to indicate that the proposed taking will not reduce the likelihood of the survival of the endangered or threatened species in the wild within the State of Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Sheepnose
Price et al. 2012 documented the presence of the sheepnose at two sites, Aroma Park and at Route 17. The 2018 EnviroScience survey reported finding 14 live sheepnose within the project area.

Little is known on the population dynamics of the sheepnose. This species is known from the Mississippi, Ohio, Cumberland, and Tennessee River main stems, and many tributary streams range wide. It historically occurred in at least 77 streams in 15 states. The current distribution, according to USFWS, includes 26 streams in 14 states. The sheepnose has been eliminated from about two-thirds of the total number of streams from which it was historically known and has been eliminated from long reaches in streams in which it currently occurs (USFWS 2019). In the vast majority of streams with extant populations, it appears to be uncommon. Critical habitat has not been designated for this species.

While the overall mussel diversity in the Kankakee River may continue to be in decline, it appears that the sheepnose remains present in multiple locations in moderate numbers in the Kankakee River. Factors affecting its continued survival at this location appear to be the presence of the host fish species, siltation, sand movement/deposition, and water quality.

Fourteen (14) live sheepnose were documented within the action area in 2018. The area of direct impact has been kept to the smallest area practicable to install the water intake infrastructure. These live sheepnose individuals would all be relocated to suitable habitat within the Kankakee River prior to any work. Adverse effects may be in the form of stress and even potential mortality during the relocation process, and for any sheepnose individuals missed during the salvage operation.

It is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Purple wartyback
The purple wartyback is found throughout most of the Midwest and Eastern United States and is found as far west as Oklahoma. Within Illinois, Michigan, Wisconsin, Iowa, and Minnesota the specie's conservation status is listed as imperiled (threatened or endangered). The INHS database contained 300 records for the purple wartyback in 40 counties. The purple wartyback is in decline throughout much of its Illinois range. However, Price et al (2012) found purple warty back at approximately 60% of their Kankakee River sampling stations and EnviroScience (2018) found 65 live individuals within their study (the project area).

These mussels will be relocated prior to construction to suitable habitat, and the extent of suitable habitat for this and other mussels in the Kankakee River is clearly much greater than the extent of the proposed project. Therefore, it is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Black sandshell
The INHS database contains 322 records from 50 counties in Illinois for the black sandshell. EnviroScience found 80 live individuals in 2018, and Price et al. 2012 reported they were found at over 80% of their collection stations on the Kankakee River. Thus, while the black sandshell, like many other mussel species, is generally in decline due to habitat and water quality degradation and loss, it appears to be fairly widespread within the Kankakee River and in Illinois.

These mussels will be relocated prior to construction to suitable habitat, and the extent of suitable habitat for this and other mussels in the Kankakee River is clearly much greater than the extent of the proposed project. Therefore, it is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Spike
The INHS database contain 590 records from over 70 counties in Illinois, thus historically spike mussels have been found throughout Illinois, particularly in the Illinois, Kaskaskia, Kankakee, Fox, Sangamon, Wabash, and little Wabash Rivers. In 2016 there were 43 extant records for the spike in the Illinois Natural Heritage Database (IDNR 2017). One live spike was found by EnviroScience in 2018, along with 4 dead shells in the project area. The live individual was located near the right descending bank within the project survey area. It is not likely within the coffer dammed work area for the project.

All mussels will be relocated from the proposed work area prior to construction, and the extent of suitable habitat for this and other mussels in the Kankakee River is clearly much greater than the extent of the proposed project. Therefore, it is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Pallid shiner
The pallid shiner was thought to have been extirpate from Illinois but was collected in the Kankakee River in Will County near Custer Park in 1978, 1979, 1981, and 1982 (Skelly and Sule 1983). For this reason, EnviroScience listed them in their 2018 report as possible in the project area, but did not detect any in their fish surveys. Generally, they are far more abundant in their southern range, and less common this far north. The species has been affected by sedimentation and increased human activity in the rivers in which it is found. The IHNS database has 70 records for this species, many from the Kankakee River at or near Custer Park or Wilmington. It is likely they remain at low numbers in the vicinity of the project site.

All fish will be relocated from within the coffer dammed work area using electro-fishing, dip-netting, and seine hauls as needed. During dewatering, any fish will also be removed as they are concentrated by the reduced water levels and release into downstream waters. See the discussion elsewhere in this ITA as to how the velocities and screen size for the intakes will reduce risk of entrainment or impingement of any fish. The extent of suitable habitat for this and other rare and listed fish in the Kankakee River is clearly much greater than the extent of the proposed project. Therefore, it is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

River redhorse
The INHS database contains 48 records for this fish species. The river redhorse is threatened in Illinois mainly due to habitat degradation. It has a limited distribution in the state and is threatened by poor water quality, siltation, increased turbidity and pollution. The IDNR has noted that the river redhorse is most common within Illinois in the Kankakee River and appears to have a stable population there (July 2017 interview in the Daily Journal). EnviroScience captured two juvenile river redhorse in their 2018 survey of the project area.

All fish will be relocated from within the coffer dammed work area using electro-fishing, dip-netting, and seine hauls as needed. During dewatering, any fish will also be removed as they are concentrated by the reduced water levels and release into downstream waters. See the discussion elsewhere in this ITA as to how the velocities and screen size for the intakes will reduce risk of entrainment or impingement of any fish. The extent of suitable habitat for this and other rare and listed fish in the Kankakee River is clearly much greater than the extent of the proposed project. Therefore, it is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Western sand darter
The INHS database contains 47 records for this species, all in the Kankakee, Kaskaskia and Mississippi River basins. It is intolerant of siltation and turbidity and avoids strong currents. This species was not detected in the 2018 EnviroScience surveys of the project area.

All fish will be relocated from within the coffer dammed work area using electro-fishing and seine hauls as needed. During dewatering, any fish will also be removed as they are concentrated by the reduced water levels and release into downstream waters. See the discussion elsewhere in this ITA as to how the velocities and screen size for the intakes will reduce risk of entrainment or impingement of any fish, and how siltation and turbidity will be controlled and reduced during construction. The extent of suitable habitat for this and

other rare and listed fish in the Kankakee River is clearly much greater than the extent of the proposed project. Therefore, it is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Weed shiner
The weed shiner may be found in the northern one-third of Illinois, mainly in the Kankakee River in Kankakee and Iroquois Counties and the Green River. It prefers sand-bottomed areas with some aquatic plants. It is considered endangered in Illinois and the INHS database contains 125 records for it in 15 counties. Its decline is thought to be mainly from degraded water quality and siltation.

All fish will be relocated from within the coffer dammed work area using electro-fishing and seine hauls as needed. During dewatering, any fish will also be removed as they are concentrated by the reduced water levels and release into downstream waters. See the discussion elsewhere in this ITA as to how the velocities and screen size for the intakes will reduce risk of entrainment or impingement of any fish, and how siltation and turbidity will be controlled and reduced during construction. The extent of suitable habitat for this and other rare and listed fish in the Kankakee River is clearly much greater than the extent of the proposed project. Therefore, it is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Mudpuppy
Generally, the mudpuppy has been in decline in river habitats in Illinois, but is abundant in Lake Michigan, and throughout the Great Lakes. Within Illinois and outside of Lake Michigan, it is largely restricted to tributaries to our largest rivers. It is believed to be common and stable in the Kankakee River (Anton pers. Comm. 2020).

All mudpuppies will be relocated with the fish from within the coffer dammed work area using dip netting and seine hauls as needed. During dewatering, any mudpuppies will also be removed as they are concentrated by the reduced water levels and release into downstream waters. See the discussion elsewhere in this ITA as to how the velocities and screen size for the intakes will reduce risk of entrainment or impingement of any amphibians, and how siltation and turbidity will be controlled and reduced during construction. The extent of suitable habitat for this and other rare and listed species in the Kankakee River is clearly much greater than the extent of the proposed project. Therefore, it is our determination that this project will not reduce the likelihood of survival of this species in Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

5) An implementing agreement, which shall include, but not be limited to (on a separate piece of paper containing signatures):

A) The names and signatures of all participants in the execution of the conservation plan;

B) the obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the IDNR;

C) Certification that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and responsibilities under the conservation plan;

D) Assurance of compliance with all other federal, State and local regulations pertinent to the proposed action and to execution of the conservation plan;

E) **Copies of any final federal authorizations for a taking already issued to the applicant**, if any.

See attached Implementing Agreement.

PLEASE SUBMIT TO: Incidental Take Authorization Coordinator, Illinois Department of Natural Resources, Division of Natural Heritage, One Natural Resources Way, Springfield, IL, 62702 OR DNR.ITAcoordinator@illinois.gov

References

Animal Diversity Web. Web page https://animaldiversity.org/accounts/Ligumia_recta/ accessed July 9, 2019.

Anton, Thomas G., 2020. Personal communication via telephone on February 25, 2020.

Chicago Wilderness. Undated. A field guide to the freshwater mussels of Chicago Wilderness. Prepared by Shedd Aquarium, Integrated Lakes Management, and Openlands with assistance from The Field Museum, Illinois Department of Natural Resources, Illinois Natural History Survey, and the Forest Preserve District of DuPage County.

Duncan, A. and N. Eckert. 2009. Confirmation of glochidia host for spike (*Elliptio dilatata*) from the Clinch River. Ellipsaria 11(3) 17.

Dunn, H.L., D. E. Sietman, and D.E. Kelner. 1999. Evaluation of recent unionid (Bivalvia) relocations and suggestions for future relocations and reintroductions. Proceedings of the First Freshwater Mollusk Conservation Society Symposium, 1999, pages 169-183.

EnviroScience. 2018a. Threatened and endangered species report for the Godley Public Water District Kankakee River Water Withdrawal Project, Custer Park, Will County, Illinois. Summer 2018 Report prepared by Environ Science, Stow, Ohio. 43pp.

EnviroScience. 2018b. Threatened and endangered species conservation measures for pipeline ILI inspections in the Kankakee River near Wilmington, Illinois. (Endangered mussel salvage and relocation; endangered fish survey/relocation; construction monitoring; habitat monitoring). Unpublished report for BP USPL.

EnviroScience. 2016. Threatened and endangered species report for BP USPL pipeline in-line inspection repairs, Kankakee River near Wilmington, Illinois. Unpublished report prepared by BP USPL.

Illinois Department of Natural Resource, Office of Water Resources. 2019. Permit No. NE2019007 Water Intake Structure Kankakee River Will County, Application No. N20170135. Letter to Joe Cosgrove dated February 28, 2019.

Illinois Department of Natural Resources. 1998. Critical Trends Assessment Program: Kankakee River Area Assessment. Published by the State of Illinois.

Illinois Department of Transportation. 2016a. Standard specifications for road and bridge construction. Springfield, Illinois. 1225 pp.

Illinois Department of Transportation. 2016b. Bureau of Design and Environment Manual. Effective February 23, 2016 through February 23, 2021. Springfield, Illinois. 4346 pp.

Illinois Urban Manual latest online at https://illinoisurbanmanual.org/ accessed on December 11, 2019. Illinois Urban Manual Partnership administered by the Kane DuPage Soil and Water Conservation District, St. Charles, Illinois.

Kwak, T.J. 1993. The Kankakee River: A case study and management recommendations for a stream diverse in habitat, fauna, and human values. Pages 123 – 1414 *in* L.W. Hesse, C.B. Stalnaker, N.G. Benson, and J.R. Zuboy (eds.) Proceedings of the symposium on restoration planning for the rivers of the Mississippi River ecosystem. U.S. National Biological Survey Biological Report 19. Washington, D.C.

Price, A.L., D.K. Shasteen, and S.A. Bales. 2012. Freshwater mussels of the Kankakee River in Illinois. Illinois Natural History Survey Technical Report 2012 (12). Champaign, Illinois. 16 pp. + appendix.

Smith, D. R. 2006. Survey design for detecting rare freshwater mussels. Journal of the North American Benthological Society 25(3):701-711.

Suloway, L. 1981. The unionid (Mollusca: Bivalva) fauna of the Kankakee River in Illinois. American Midland Naturalist 105(2): 233-239.

U.S. Fish and Wildlife Service Region 3. 2020. Comment letter from the Chicago Ecological Services Field Office to Joe Cosgrove Godley Public Water District dated September 26, 2019.

U.S. Fish and Wildlife Service. 2018. Biological Opinion: Impacts to the sheepnose mussel from the Evansville Marine Service, Inc. project in the Ohio River (ORM 748.5-749.5) Spencer County, Indiana. USFWS Indiana Field Office, Bloomington, IN. 23pp.

U.S. Fish and Wildlife Service. 2019. Biological Opinion: Tennessee Valley Authority – Bank stabilization project to protect cultural resources within Chickamauga Reservoir. FWS Log #04ET1000-2019-F-0238. USFWS Tennessee Field Office, Cookeville, TN. 24pp.

U.S. Fish and Wildlife Service 2019. Sheepnose mussel fact sheet. Online at https://www.fws.gov/midwest/endangered/clams/sheepnose/SheepnoseFactSheetMarch2012.html accessed June 25, 2019.

Implementation Agreement
Godley Public Water District Intake in the Kankakee River
Will County, Illinois.

A) The names and signatures of all participants in the execution of the conservation plan;

This project is entirely the responsibility of the Godley Public Water District and their duly authorized representative has signed below committing to the execution of this Conservation Plan as a part of the project.

B) The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the IDNR;

The Godley Public Water District is solely responsible for completing this project through its designated consultants and contractors.

Construction start date: 3/28/2021

Construction completion date: 9/30/2022

IDNR will be notified of the time/location of the preconstruction meeting, the start of construction, and the completion of construction.

C) Certification that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and responsibilities under the conservation plan;

See certification clause below.

D) Assurance of compliance with all other federal, State and local regulations pertinent to the proposed action and to execution of the conservation plan;

See certification clause below.

E) Copies of any final federal authorizations for a taking already issued to the applicant, if any.

USFWS Biological Opinion authorizing take will be provided upon receipt.

CERTIFICATION: The Godley Public Water District hereby certifies that it has the authority and funding to complete the project and to address the issues proposed in this Incidental Take Conservation Plan for these state-listed mussels. The Godley Public Water District is in charge of construction and will assure that all applicable state, federal, and local laws will be adhered to during the completion of the project.

DATE: 2/28/2020

Joe Cosgrove, General Manager

Attachment 1

Threatened and Endangered Species Report for the Godley Public Water District Kankakee River Water Withdrawal Project, Custer Park, Will County, Illinois, Summer 2018
EnviroScience - October 11, 2018

THREATENED AND ENDANGERED SPECIES REPORT FOR THE GODLEY PUBLIC WATER DISTRICT KANKAKEE RIVER WATER WITHDRAWAL PROJECT

Custer Park, Will County, Illinois, Summer, 2018

Prepared for:

Godley Public Water District

P.O. Box 130
Godley, Illinois 60407

Project No.: 10707
Date: 10/11/2018

Prepared by:

EnviroScience
Excellence In Any Environment

5070 Stow Rd.
Stow, OH 44224
800-940-4025
www.EnviroScienceInc.com

1.0 TABLE OF CONTENTS

List of Tables

List of Graphs

List of Figures

List of Appendices

ACKNOWLEDGMENTS

M Gingerich Gereaux & Associates (MG^2A) provided funding for this project through a contract with Godley Public Water District (GPWD), and EnviroScience, Inc., was a subcontractor to MG^2A. Todd Gereaux was the Project Manager for GPWD. Mr. Ryan Schwegman was the project manager, malacologist (mussel expert), and diver for EnviroScience. Mr. Spencer George, Mr. Mike Stoll, Mr. Shawn Nairn, Mr. Dave Czayka and Mr. Philip Mathias were additional divers for EnviroScience. Mr. Dave Czayka was the ES fisheries biologist. Mr. Gregory Hocevar provided GIS mapping. Ms. Melissa Vaccarino provided QA/QC and technical writing support.

1.0 INTRODUCTION

EnviroScience, Inc. has been contracted by the Godley Public water District (GPWD) to support a water withdrawal project near Custer Park, Will County, Illinois. The project area's coordinates are approximately 41.24272°, -88.1228°, and it is situated ~ 7.2 kilometers (km) or 4.5 miles (mi) upstream from the dam at Wilmington, IL (Figure 1).

GPWD proposes to put a water intake in the middle of the Kankakee River. The intake would be 92 meters (m) or 302 feet (ft) from the centerline of IL Route 113, or 80m (262ft) from the left descending riverbank. Project construction activities could affect freshwater mussels (Family: Unionidae) including any state threatened and endangered (T&E) species inhabiting the riverbed. This reach of the Kankakee River has been recently surveyed for freshwater mussels (Price, Shasteen, & Bales, 2012) and two of their survey sites were located 7.3km (4.5mi; Site 7) and 14.5km (9mi; Site 8) downstream from the present project site. EnviroScience, Inc. (2016 & 2018) has completed three surveys near the project. Two were 13km (8mi) and one was 15km (9.3mi) downstream of the project site. Based on both living and fresh dead mussel species reported from these sites, a total of 24 mussel species were expected within the project area. Of these, the federally and state endangered Sheepnose (*Plethobassus cyphyus*) was found live, along with live Purple Wartyback (*Cyclonaias tuberculata*), Black Sandshell (*Ligumia recta*), and Spike (*Elliptio dilatata*), which are listed as threatened in Illinois (Illinois Endangered Species Protection Board, 2015). Living Sheepnose mussels were also found by Price, Shasteen, & Bales (2012) at a location 39km (24mi) upstream from the project site.

An additional 5 species were found as fresh dead (<1 year) and relict shells (weathered dead/subfossil) at the closest downstream site, which indicate that these additional species may have lived in the project area from less than one year to several decades ago. It is also possible that such shells could have washed into the area from far upstream. These species included four non-listed species and one subfossil federally and state endangered Snuffbox (*Epioblasma triquetra*).

Two state listed fish are found near the project area: River Redhorse (*Moxostoma carinatum*) and Pallid Shiner (*Hybopsis amnis*). River Redhorse are found only in large river systems and are typically found in deep pools with moderate current over bedrock or gravel substrate (Trautman, 1981). Pallid Shiners inhabit large- to medium-sized rivers and occasionally streams, and are often found at the downstream ends of sand and gravel bars (MNDNR, 2016).

Unionid fauna across North America has been declining dramatically due to numerous factors such as impoundment, channelization, acid mine drainage, sedimentation, pollution, and invasive species. As a result, the U.S. Army Corps of Engineers (USACE) requires the project area to be inspected for mussel and fish resources. If mussels are found, they may be moved and relocated out of the area of direct impact to suitable habitat nearby, but only if authorized by the Illinois Department of Natural Resources (IDNR) and/or the U.S. Fish and Wildlife Service (USFWS). If living or fresh dead federally listed species are found, they will be returned to their place of collection and the USFWS and IDNR will be consulted.

Survey methods were proposed by EnviroScience and submitted to the respective resource agencies for review, primarily the Illinois Department of Natural Resources (IDNR) and the U.S.

Fish and Wildlife Service (USFWS). All methods were approved by the IDNR and USFWS prior to fieldwork. Resource agencies were notified via email of any modifications to the protocol made during the fieldwork.

2.0 METHODS

2.1 MUSSEL SURVEY METHODS

The following state and federal-listed freshwater mussel species were identified as potentially present in the project area by the resource agencies (Appendix A).

Common Name	Species Name	Code	Federal Listing	IL State Listing
Sheepnose	*Plethobasus cyphyus*	PLCY	FC	E
Black Sandshell	*Ligumia recta*	LIRE		T
Spike	*Elliptio dilatata*	ELDI		T
Purple Wartyback	*Cyclonaias tuberculata*	CYTU		T

The project area was 10m (33ft) wide along the west bank and extended riverward 80m (262ft) for a total area of 800m2 (8,611ft2). The mussel survey protocol was adapted from the 2014 Iowa Mussel Management Plan (Gritters, Schonhoff, & Osterkamp, 2014). The project was categorized as a "small project". Divers placed a total of 13 measured and weighted transect lines perpendicularly into the river. Three transect lines were placed bank to bank (150m [492ft]) within the area of direct impact (ADI). One was placed at the project centerline; and two were located 4m (13ft) upstream and downstream of the project centerline, respectively. The remaining ten transects were located 132 – 212m downstream of the project centerline. These transects were completed in a previous sampling event (July 6, and later August 10-11 due to a rain event) which had utilized incorrect centerline coordinates. Compared to the correct centerline coordinates, the transects were located downstream at 132-, 142-, 153-, 157-, 161-, 172-, 182-, 192-, 202-, and 212-m marks. Three of the transect lines (153DNS, 157DNS, and 161DNS) extended bank to bank. The other seven transects extended 100m from the left descending bank. Each transect line was surveyed for its entire length 0.5m (1.6ft) upstream and downstream of the line at a rate of $1m^2$/min ($11ft^2$/min). A total of 41 quadrats were sampled from the ADI and from transects 153DNS, 157DNS, and 161DNS.

2.1.1 Mussel Processing

All live mussels were identified, counted, and sexed (sexually dimorphic species only). All dead shells were scored as either fresh dead (lustrous nacre, dead <1yr), weathered dead (dull or chalky nacre, dead one to many years), or subfossil (heavily weathered and fragmented, dead many years to many decades) and noted as present. Live mussels were kept submersed in ambient river water before and after processing. Mussels were kept cool and moist during processing and were not out of the water more than 5min. All prescribed data for mussels (size, species, % zebra mussel infestation, etc.) and habitat (substrate composition) was collected and included in this report. Digital images of representative specimens were recorded and are provided in Appendix B.

2.2 FISH SURVEY METHODS

The following state-listed fish species were identified as potentially present in the project area by the resource agencies (Appendix A).

Common Name	Species Name	IL State Listing
Pallid Shiner	*Hybopsis amnis*	E
River Redhorse	*Moxostoma carinatum*	T

Survey methods for the presence/ absence of state T&E fish species used a combination of boat electrofishing and low pulse backpack electrofishing downstream of the ADI near incorrect centerline coordinates. Although this region was slightly downstream it represented the same habitat types, which suggest very similar species assemblage. The project area was 10m (33ft) wide along the bank and extended riverward 80m (262ft).

2.2.1 Electrofishing

Backpack electrofishing for the collection of juvenile lampreys was conducted using multiple pass electrofishing with in the left descending bank where suitable soft substrates were present. A Smith Root LR 20 backpack electrofisher was sent at 125 volts and at 3 gated pulses. The wand was sent at the shore line and drawn down to deeper water. The voltage was increased during passes. A total of 665 seconds of active sampling was completed during the survey.

Boat electrofishing was completed within and near the project area outlined in the mussel survey section above. Boat electrofishing gear consisted of a Smith-Root 5.0 (10hp) Pulsed DC Boat Electrofisher mounted on a 16' Jon boat with a 25-horsepower outboard motor. Day boat electrofishing was completed from upstream to downstream, shocking with the current to collect fish. This was completed multiple times moving away from the left descending bank and stopping at the right descending bank. A total of 1514 seconds of active sampling was conducted, focusing on all habitat types present to encompass as many species as possible. Fish were placed in an aerated live well until processing.

As part of EnviroScience health and safety policies, biologists wore rubber soled/close-toed shoes and rubber gloves to prevent shock hazards. Personal floatation devices (PFDs) were worn by biologists at all times while operating in the boat. Additionally, the boat operator was in close proximity to the junction box in case emergency shutoff was required.

2.2.2 Fish Processing

All fish collected were identified to species, counted, and examined for deformities, erosions, lesions and tumors (DELT anomalies). Except those preserved for laboratory identification, all fish were released unharmed. All data collected from survey were written on EnviroScience fisheries field data sheets. Digital images of representative specimens of fish species were taken against a measurement scale (Appendix C).

3.0 RESULTS

3.1 MUSSEL SURVEY RESULTS

EnviroScience began fieldwork for the downstream portion of the mussel survey July 6, 2018 but was halted because sampling condition began to decline after a significant rain event. Survey work resumed from August 10-August 11, 2018. The ADI was sampled September 13, 2018. The project was led by Ryan Schwegman who was in possession of the federal, state general, and state T&E permits to complete the mussel work. Mr. Dave Czayka and Mr. Phil Mathias assisted with survey work. Field conditions for each event were ideal, with a water temperature ranged from 25°C (78˚F) of 28°C (83˚F) and below average flows (~1,000cfs). Visibility at depth was approximately 61cm (24in) or greater. Representative digital images are presented in Appendix B.

The site was found to have high quality freshwater mussel habitat and resources. The left descending bank was predominantly bedrock with high quality habitat (sand, gravel and cobble) found near the bank margins only. Mid river and extending to the right descending bank was high quality mussel habitat. The survey detected a large proportion of the species described in the IDNR / Illinois Natural History Survey Kankakee River watershed mussel study (Price, Shasteen, & Bales, 2012) at the site alive, including live federally and state listed Sheepnose, and state threatened Black Sandshell, Purple Wartyback, and Spike.

Overall, a total of 4,938 living mussels and 24 species were detected (Table 3.1). Fresh dead and weathered dead shells contributed two additional species. The project area was found to contain extensive and significant freshwater mussel resources including federally and state listed species. The state threatened Purple Wartyback (*Cyclonaias tuberculata*) and Black Sandshell (*Ligumia recta*) were detected throughout the survey area. Fourteen live Sheepnose were also found scattered in the survey area. A single state threatened Spike was collected near the right descending bank (RDB) in transect 153DNS. See Table 3.1 for federal and state status definitions.

Mucket was dominant, comprising 80.26% of the mussels collected. Purple Wartyback was the second most abundant species (5.37%) and Pimpleback (2.96%) the third most abundant.

Per the requirements of our federal and state permits, notification was made after listed species were picked up by Mr. Ryan Schwegman on Monday 7/9/2018. No live mussels were sacrificed.

Table 3.1. Status, Numbers, Relative Abundance, and Length Data of Freshwater Mussels (Transects and Quadrats) from the Proposed Intake for the Godley Public Water District River Water Withdrawal Project.

					Best Condition[2]			
Species	Common Name	Code	Federal Status[1]	IL Status[1]	L	FD	D	Relative frequency (% total)
Actinonaias ligamentina	Mucket	ACLI			3963			80.26%
Alasmidonta marginata	Elktoe	ALMA				1	1	0.00%
Amblema plicata	Threeridge	AMPL			125			2.53%
Cyclonaias pustulosa	Pimpleback	CYPU			146			2.96%
Cyclonaias tuberculata	Purple Wartyback	CYTU		T	265			5.37%
Eurynia dilatata	Spike	EUDI		T	1		4	0.02%
Fusconaia flava	Wabash Pigtoe	FUFL			8	1		0.16%
Lampsilis cardium	Plain Pocketbook	LACA			67			1.36%
Lampsilis siliquoidea	Fatmucket	LASI			8			0.16%
Lasmigona complanata	White Heelsplitter	LSCO			1		1	0.02%
Lasmigona compressa	Creek Heelsplitter	LSCM			1			0.02%
Lasmigona costata	Flutedshell	LSCS			28			0.57%
Leptodea fragilis	Fragile Papershell	LEFR			4			0.08%
Ligumia recta	Black Sandshell	LIRE		T	80			1.62%
Megalonaias nervosa	Washboard	MENE			53			1.07%
Obliquaria reflexa	Threehorn Wartyback	OBRX			4			0.08%
Plethobasus cyphyus	Sheepnose	PLCY	FC	E	10			0.20%
Pleurobema sintoxia	Round Pigtoe	PLSI			64			1.30%
Potamilus alatus	Pink Heelsplitter	POAL			13			0.26%
Pyganodon grandis	Giant Floater	PYGR					1	0.00%
Quadrula quadrula	Mapleleaf	QUQU			2			0.04%
Strophitus undulatus	Creeper	STUN			6	1		0.12%
Theliderma metanevra	Monkeyface	THME			70			1.42%
Truncilla donaciformis	Fawnsfoot	TRDO			1	1		0.02%
Truncilla truncata	Deertoe	TRTR			17			0.34%
Venustaconcha ellipsiformis	Ellipse	VEEL			1			0.02%
Total:					4938	4	7	100.00%
No. of Species:					24	4	4	

1 – FC = Federal Concern, E = Endangered, T = Threatened
2 – FD = Fresh Dead Shell, D = Includes weathered dead and subfossil shells

3.1.1 Semi-quantitative Searches (Metered Transects)

Overall, 4669 live mussels representing 24 species were collected along search transects. Results from the transect searches are presented in Table 3.2 and Figure 2. Locations of listed species only are presented in Figure 3. The federally and state endangered Sheepnose were detected in downstream transects and one was detected in the lateral buffer (transect 4DNS) of the ADI (Figure 4). The state listed Purple Wartyback (Figure 5) and Black Sandshell (Figure 6) were found throughout the survey area. The single state listed Spike was found in the 153DNS transect near the right descending bank.

Table 3.2. Mussel Transect Search Results from the Proposed Intake for the Godley Public Water District River Water Withdrawal Project.

Transects	ACLI	AMPL	CYPU	CYTU	ELDI	FUFL	LACA	LASI	LEFR	LIRE	LSCM	LSCO	LSCS	MENE	OBRX	PLCY	PLSI	POAL	QUQU	STUN	THME	TRDO	TRTR	VEEL	Total / Transect	Species / Transect
4m UPS	92	13	13	14		2	3		1	7				3			1	3			2				154	12
0 - centerline	252	5	7	12			3	3		3		1		4	1		3	2			2				298	13
4m DNS	254	14	15	14			10	2	2	6			4	7		1	6	4	2		6		3		350	16
132m DNS	305	22	17	33		5	2		1	4			3	5		1	7			2	7		2		416	15
142m DNS	146	10	14	19			4			6	1		3	3	2	1	7	1			8		3		228	15
153m DNS	366	17	6	37	1		7			10			3	6		1	11	1			5				471	13
157m DNS	430	16	25	40			7	2		11			1	11		1	5			1	10		2		562	14
161m DNS	665	12	5	18			4	1		7			4	6		1	7	1		2	10		2		745	15
172m DNS	134		1	5			1							1			3					1			146	7
182m DNS	283	3	9	18		1	8			5			1	2		3	2			1	5				341	13
192m DNS	293	6	6	14			6			8			3	2			4				10		1	1	354	12
202m DNS	394	1	3	8			1			3			1	1							1				413	9
212m DNS	171		1	8			4			3			1	1			1				1				191	9
Grand Total	**3785**	**119**	**122**	**240**	**1**	**8**	**60**	**8**	**4**	**73**	**1**	**1**	**24**	**52**	**3**	**9**	**57**	**12**	**2**	**6**	**67**	**1**	**13**	**1**	**4669**	**24**
Species Status*				IL-T	IL-T					IL-T						FC/IL-E										

Shaded cells indicate ADI transect to 80m

*FC = Federal Concern, IL-E = Illinois Endangered, IL-T = Illinois Threatened

3.1.2 Quantitative Searches (Quadrats)

A total of 41 quadrat (0.25m^2) samples were excavated along transects and examined on the surface by the EnviroScience malacologist. A total of 269 live mussels were collected. The average mussel density for all species was 26.25/m^2, with 13 quadrats being empty. The maximum observed density was 96/m^2 and this sample was located in the 161DNS transect, 100m riverward. Mucket was dominant at a density of 17.37/m^2. The state endangered Purple Wartyback and Black Sandshell were detected at 2.44/m^2 and 0.68/m^2 respectively. The federally listed species of concern and state endangered Sheepnose was detected at a density 0.10/m^2, resulting from a single individual. Spike was not detected during quadrat sampling. Results from the quadrat excavations are presented in Table 3.3. and Figure 8. The total estimated abundance of species within the ADI (number per m^2 times the area) is presented in Table 3.3.

Table 3.3. Mussel Quantitative (Quadrat) – Based Estimated Density Results for the Proposed Intake for the Godley Public Water District River Water Withdrawal Project.

						Density		
Species	Common Name	Code	Federal Status [1]	IL Status [1]	Live	No/m^2	Relative frequency (% total)	Est. ADI Density
Actinonaias ligamentina	Mucket	ACLI			178	17.37	66.17%	13,896
Amblema plicata	Threeridge	AMPL			6	0.59	2.23%	472
Cyclonaias pustulosa	Pimpleback	CYPU			24	2.34	8.92%	1,872
Cyclonaias tuberculata	Purple Wartyback	CYTU		T	25	2.44	9.29%	1,952
Lampsilis cardium	Plain Pocketbook	LACA			7	0.68	2.60%	544
Lasmigona costata	Flutedshell	LSCS			4	0.39	1.49%	312
Ligumia recta	Black Sandshell	LIRE		T	7	0.68	2.60%	544
Megalonaias nervosa	Washboard	MENE			1	0.10	0.37%	80
Obliquaria reflexa	Threehorn Wartyback	OBRX			1	0.10	0.37%	80
Plethobasus cyphyus	Sheepnose	PLCY	FC	E	1	0.10	0.37%	80
Pleurobema sintoxia	Round Pigtoe	PLSI			7	0.68	2.60%	544
Potamilus alatus	Pink Heelsplitter	POAL			1	0.10	0.37%	80
Theliderma metanevra	Monkeyface	THME			3	0.29	1.12%	232
Truncilla truncata	Deertoe	TRTR			4	0.39	1.49%	312
Total:					269	26.25	100.00%	21,000
No. of Species: (Total Live + Dead):					14			

1 – FC = Federal Concern, E = Endangered, T = Threatened

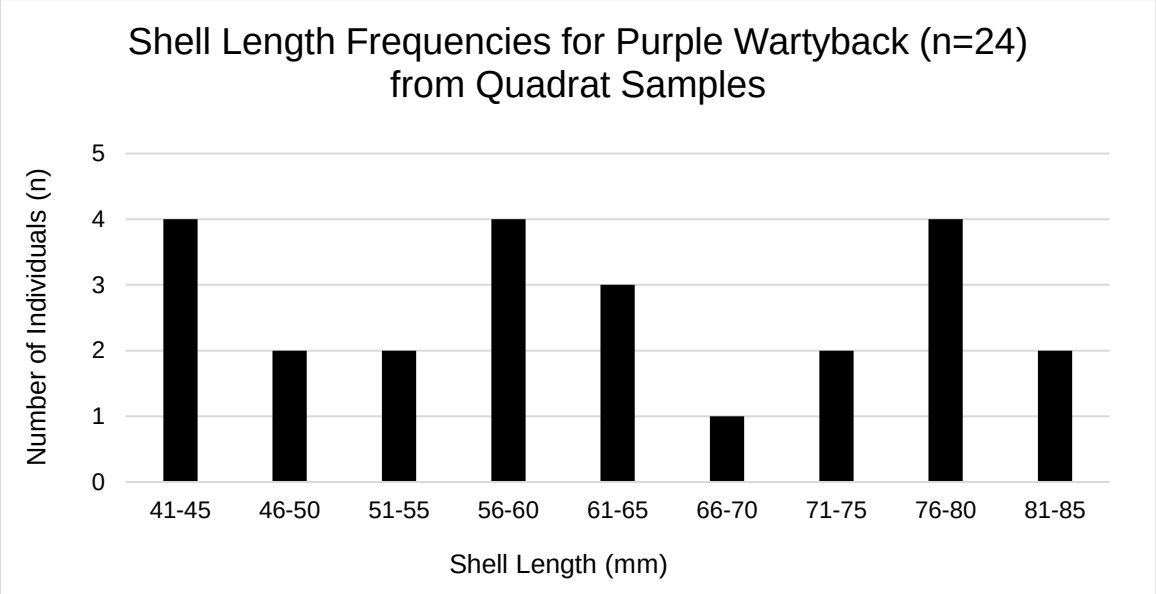
3.1.2.1 Surface and Excavated Comparison

Overall, 52.04 percent of mussels found in quadrats were found in surface samples (n=140) compared to excavated (n=129). Muckets accounted for 74.2% of surface samples (n=104) and 71.1% of bottom excavated samples (n=74). While most mussel species found in larger numbers (>7) were distributed throughout surface and excavated samples, 83% of Pimpleback (*Cyclonaias pustulosa*) were from bottom excavated samples. Purple Wartyback and Black Sandshell were nearly evenly distributed (14:11 and 3:4 total mussels surface : excavated respectively). The single Sheepnose was found in a surface sample.

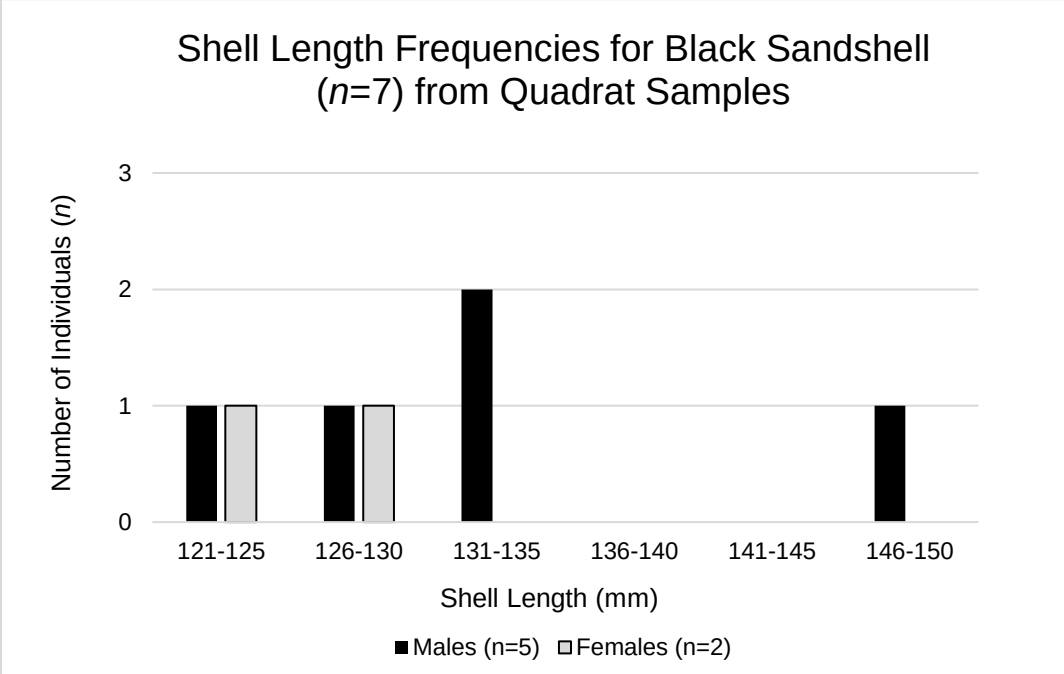
3.1.2.2 Length Histograms for Listed Species

Length histograms were generated for Purple Wartyback (Graph 3.1) and for Black Sandshell (Graph 3.2) from quadrat samples. A histogram was not generated for the single Sheepnose found during quadrat sampling, which was 64mm long.

Graph 3.1. Shell Length Histogram for Purple Wartyback.



Graph 3.2. Shell Length Histogram by Sex for Black Sandshell.



3.2 FISH SURVEY RESULTS

On August 10, 2018, EnviroScience completed the fisheries sampling when the river was at 1.13 feet (USGS gauge Wilmington, IL) and water clarity was appropriate for sampling. In total, 2179 seconds of electrofishing was completed within the project area and yielded 56 individuals, comprised of 17 species. Table 3.4 describes the species and number of individuals collected. Two juvenile River Redhorse (*Moxostoma carninatum*) where collected within the survey and are state listed. Representative photographs are present in Appendix C.

Table 3.4. Fisheries Survey Results for the Proposed Intake for the Godley Public Water District River Water Withdrawal Project.

Common Name	Scientific Name	# of Individuals
Banded Darter	*Etheostoma zonale*	4
Black Redhorse	*Moxostoma duquesnei*	3
Blackside Darter	*Percina maculata*	6
Bluntnose Minnow	*Pimephales notatus*	3
Channel Catfish	*Ictalurus punctatus*	2
Common Logperch	*Percina caprodes*	2
Common Shiner	*Luxilus cornutus*	2
Golden Redhorse	*Moxostoma erythrurum*	2
Largemouth Bass	*Micropterus salmoides*	1
Mimic Shiner	*Notropis volucellus*	3
Northern Hogsucker	*Hypentelium nigricans*	1
River Redhorse	*Moxostoma carinatum*	2
Slenderhead Darter	*Percina phoxocephala*	1
Smallmouth Bass	*Micropterus dolomieu*	17
Spotfin Shiner	*Cyprinella spiloptera*	2
Spotted Sucker	*Minytrema melanops*	1
Walleye	*Sander vitreus*	4

4.0 DISCUSSION

4.1 FRESHWATER MUSSELS

A relatively dense and diverse freshwater mussel community was found within the survey area. While both federally and state listed species were located within the area of direct impact, this region supported the lowest densities of freshwater mussels when comparing the results of the entire survey area. Future consideration of construction at this site should involve close coordination with both state and federal agencies.

4.2 FISH

The Pallid Shiner (*Hybopsis amnis*) and River Redhorse *(Moxostoma carinatum)* are likely to be to be found within this section of the Kankakee. Only two juvenile River Redhorse were collected during the survey. Pallid Shiner prefers slow shallow water more represented on the right descending bank, whereas, the River Redhorse prefers deeper runs of the right descending bank and center of river. It should be noted that no lamprey of any type was observed during electrofishing or bottom excavations during the mussel survey. Lamprey can be commonly encountered during mussel surveys within some watersheds in northwestern Pennsylvania (G. Zimmerman, pers. obs.).

Other state listed fish species are present in the Kankakee River watershed were not observed. Blacknose Shiner *(Notropis heterolepis)*, Weed Shiner *(Notropis texanus),* Banded Killifish *(Fundulus diaphanus)*, Starhead Topminnow (*Fundulus dispar*) and American Eel (*Anguilla rostrata*), prefer low gradient rivers / lakes with sandy bottoms and aquatic vegetation. The Northern Brook Lamprey (*Ichthyomyzon fossor*) is unlikely to be present as they typically prefer small, high gradient streams near a larger river for rearing ameocetes (Troutman, 1957).

5.0 REFERENCES

EnviroScience, Inc. (2016). Threatened and Endangered Species Report for BP USPL Pipeline In-Line Inspection Repairs, Kankakee River Near Wilmington, Illinois. Prepared for BP USPL.

EnviroScience, Inc. (2018). Threatened and Endangered Species Conservation Measures for Pipeline ILI Inspections in the Kankakee River Near Wilmington, Illinois (Endangered Mussel Salvage And Relocation; Endangered Fish Survey / Relocation; Construction Monitoring; Habitat Monitoring). Prepared for BP USPL.

Gritters, S., Schonhoff, B., & Osterkamp, K. (2014). Iowa Mussel Management Plan for Sovereign Lands permits on the Mississippi River. Iowa Department of Natural Resources.

Illinois Endangered Species Protection Board. (2015). https://www.dnr.illinois.gov/ESPB/Documents/2015_ChecklistFINAL_for_webpage_051915.pdf. Accessed August, 2018.

Minnesota Department of Natural Resources. (2016). Species Profile: Hybopsis amnis (Hubbs and Greene, 1951) Pallid Shiner. http://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=AFCJB15010. Accessed February 21, 2018.

Price, A. L., Shasteen, D.K., & Bales, S.A. (2012). Freshwater Mussels of the Kankakee River. INHS Technical Report 2012 (12). Illinois Department of Natural Resources: Office of Resource Conservation U.S. Fish & Wildlife Service Illinois Natural History Survey.

Trautman, M. B. (1981). The fishes of Ohio: With illustrated keys. Columbus: Ohio State University Press.

.

Figures

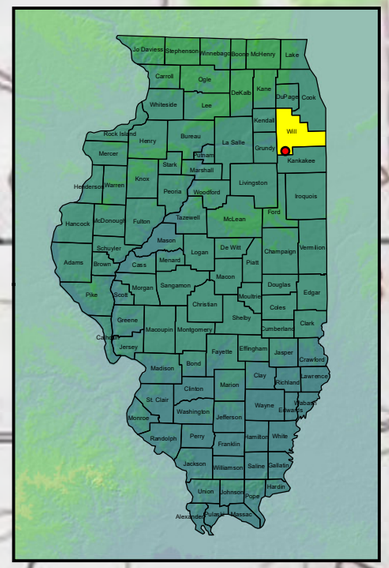


Figure 1. Location of Mussel Survey on the Kankakee River. Godley Public Water District.

Survey Location

0 500 1,000 2,000 Feet

0 150 300 600 Meters

EnviroScience
Excellence In Any Environment

Date: 10/10/2018

Basemap courtesy of Esri.

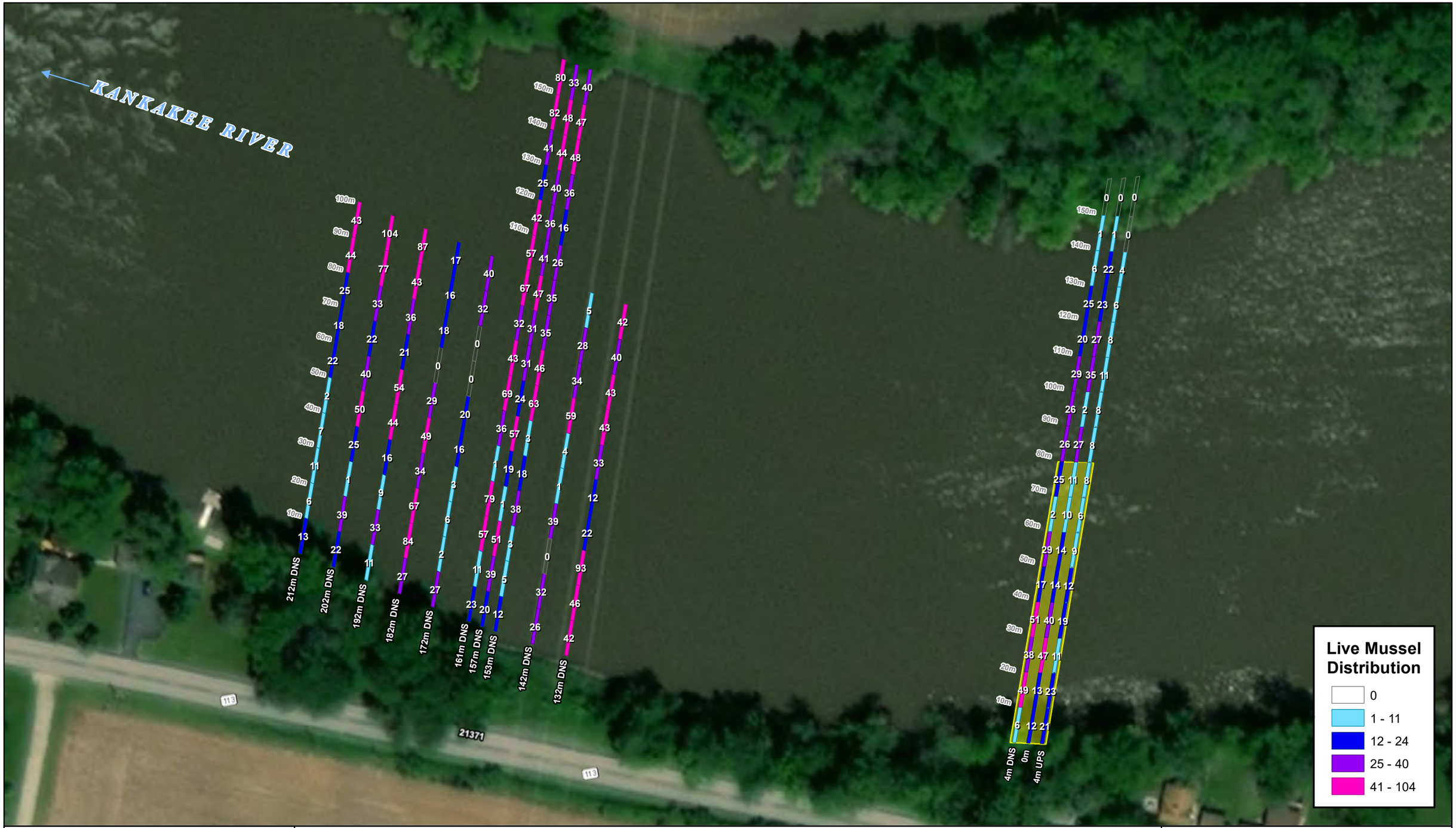


Figure 2. Total Number of Live Mussels per 10m Transect Section. Godley Public Water District.

Area of Direct Impact (ADI)

100m^2 Survey Cell (1m x 10m)

0 75 150 300 Feet

0 25 50 100 Meters

EnviroScience
Excellence In Any Environment

Date: 10/10/2018 Path: P:\10_Projects\MMG2A\480M\10707_Kankakee_Godley_Intake\10707_GIS_Rev\Map1_Total_Live.mxd

Basemap courtesy of Esri.

KANKAKEE RIVER

212m DNS 202m DNS 192m DNS 182m DNS 172m DNS 161m DNS 157m DNS 153m DNS 142m DNS 132m DNS

4m DNS 0m 4m UPS

113 21371 113

Live Federal/State Listed Mussel Distribution

- 0
- 1 - 3
- 4 - 5
- 6 - 8
- 9 - 13

Figure 3. Total Number of Live State/Federal Listed Mussels per 10m Transect Section. Godley Public Water District.

Area of Direct Impact (ADI)

100m^2 Survey Cell (1m x 10m)

0 75 150 300 Feet

0 25 50 100 Meters

EnviroScience
Excellence In Any Environment

Date: 10/10/2018

Basemap courtesy of Esri.

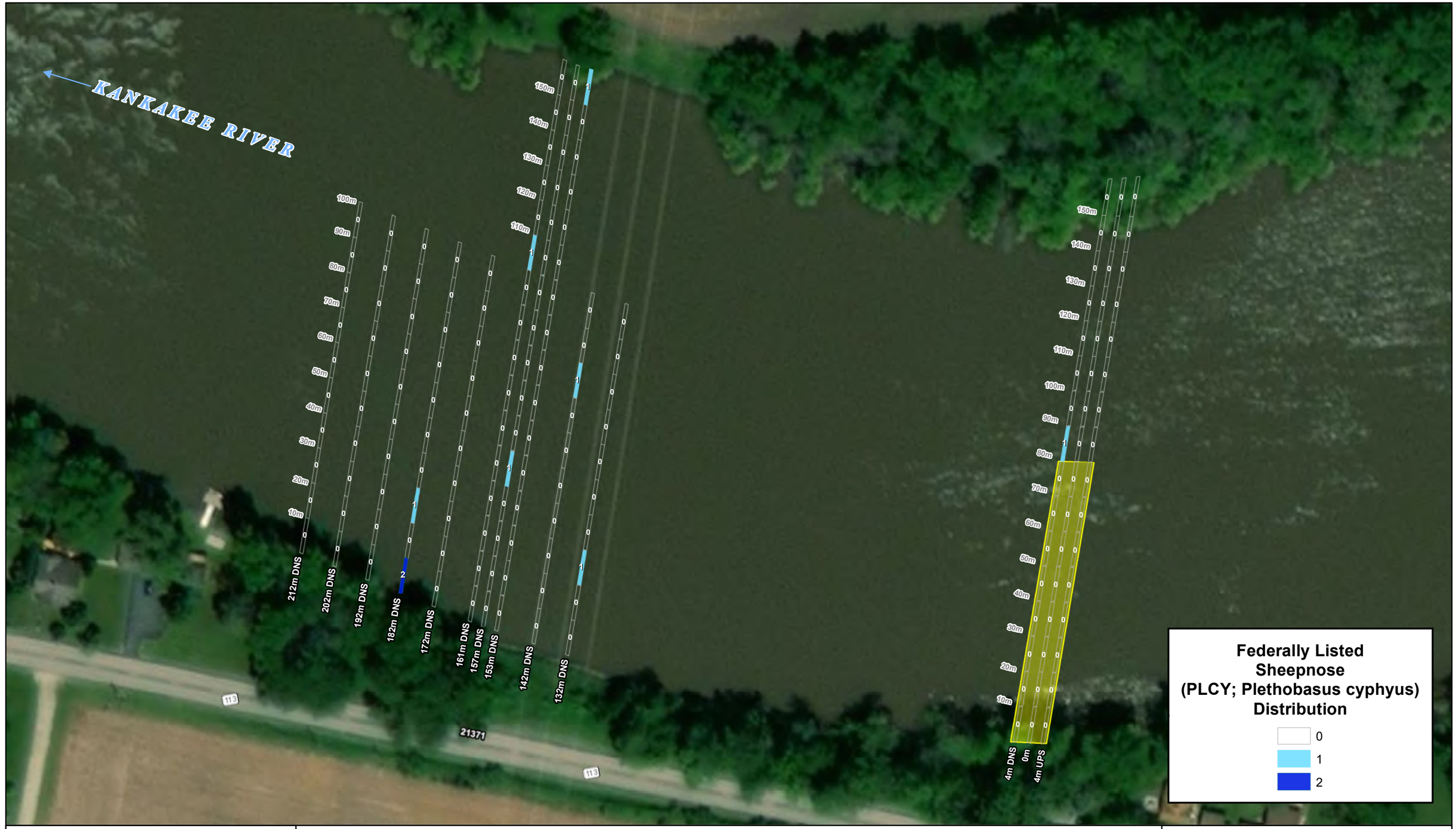


Figure 4. Total Number of Sheepnose Mussels (PLCY; Plethobasus cyphyus) Per 10m Transect Section. Godley Public Water District.

Area of Direct Impact (ADI)

100m^2 Survey Cell (1m x 10m)

0 75 150 300 Feet

0 25 50 100 Meters

EnviroScience
Excellence In Any Environment

Date: 10/10/2018

Basemap courtesy of Esri.

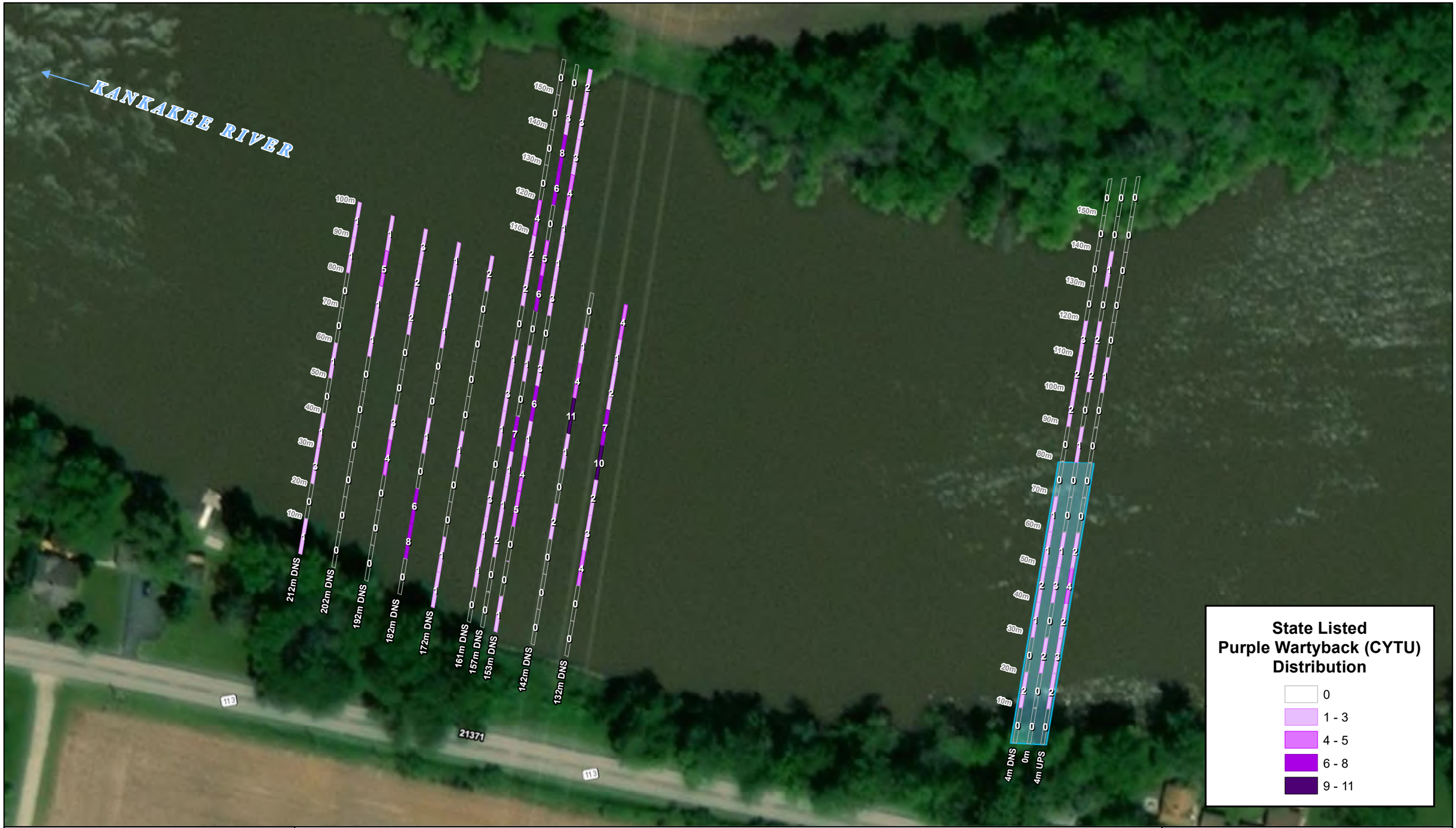


Figure 5. Total Number of Purple Wartyback Mussels (CYTU; Cyclonaias tuberculata) Per 10m Transect Section.
Godley Public Water District.

Area of Direct Impact (ADI)

100m^2 Survey Cell (1m x 10m)

0 75 150 300 Feet

0 25 50 100 Meters

EnviroScience
Excellence In Any Environment

Date: 10/10/2018

Basemap courtesy of Esri.

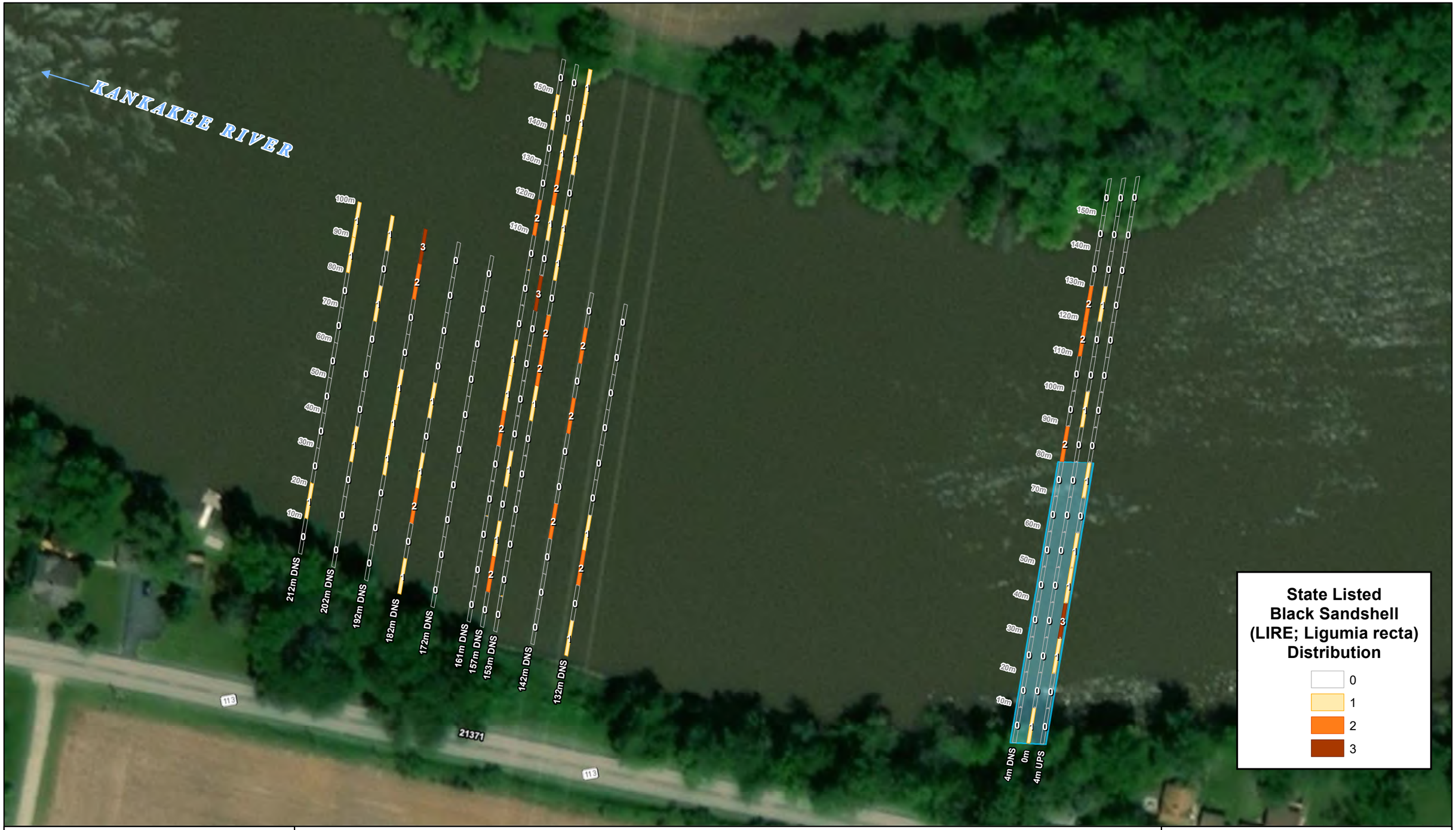


Figure 6. Total Number of Black Sandshell Mussels (LIRE; Ligumia recta) Per 10m Transect Section. Godley Public Water District.

Area of Direct Impact (ADI)

100m^2 Survey Cell (1m x 10m)

0 75 150 300 Feet

0 25 50 100 Meters

EnviroScience
Excellence In Any Environment

Date: 10/10/2018

Basemap courtesy of Esri.

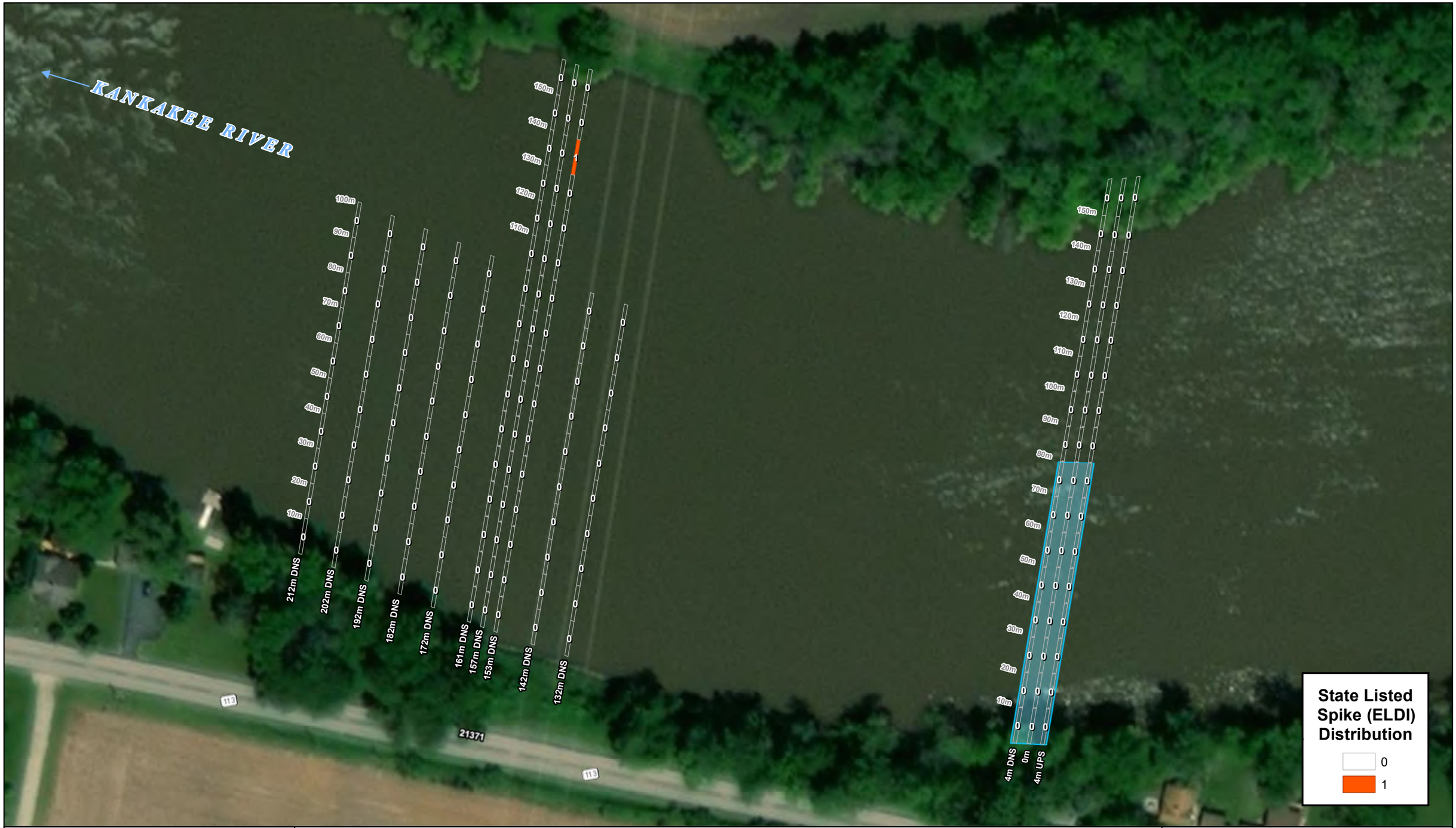


Figure 7. Total Number of Spike Mussels (ELDI; Elliptio dilatata) Per 10m Transect Section. Godley Public Water District.

Area of Direct Impact (ADI)

100m^2 Survey Cell (1m x 10m)

0 75 150 300 Feet

0 25 50 100 Meters

EnviroScience
Excellence In Any Environment

Date: 10/10/2018

Basemap courtesy of Esri.

Figure 8. Total Number of Mussels Collected on the Surface Versus Total Number of Mussels Excavated per Quadrat. Godley Public Water District.

Area of Direct Impact (ADI)

Quadrat (.25m x .25m)

0 50 100 200 Feet

0 15 30 60 Meters

EnviroScience
Excellence In Any Environment

Date: 10/10/2018

Basemap courtesy of Esri.

Appendix A

USACE Correspondence

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
231 SOUTH LASALLE STREET
CHICAGO, ILLINOIS 60604-1437

REPLY TO
ATTENTION OF:

February 1, 2018

Technical Services Division
Regulatory Branch
LRC-2017-00758

SUBJECT: Mussel Survey Request for Godley Public Water District Kankakee River Water Withdrawal Project located near 21364 West Illinois Route 113, Custer Park, Will County, Illinois

Joe Cosgrove
Godley Public Water District
P.O. Box 130
Godley, Illinois 60407

Dear Mr. Cosgrove:

This is in regard to your recent permit submittal for the Godley Public Water Withdraw Intake – Kankakee River. Based on the project location and recent information from our GIS database, it has come to our attention that the following State and Federal Threatened and Endangered Species have been identified near your project site:

1. *Plethobasus cyphyus* – Sheepnose
2. *Ligumia recta* – Black Sandshell
3. *Cyclonaias tuberculata* – Purple Wartyback
4. *Elliptio dilatata* – Spike
5. *Moxostoma carinatum* – River Rednose
6. *Hybopsis amnis* – Pallid Shiner

Based on the Section 7 of the Endangered Species Act and the Illinois Endangered Species Protection Act, this office is requesting a fish and mussel survey to determine whether the potential presence of these fish and mussels will be affected by your project. The survey should be conducted and reported by a group or agency familiar with fish and mussel surveys in this region and include recommendations from the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources.

If you have any questions, please contact Stasi Brown of my staff by telephone at (312) 846-5544, or email at stasi.f.brown@usace.army.mil.

Sincerely,

Diedra L. McLaurin
Team Leader, West Section
Regulatory Branch

Copy Furnished

Will County Land Use Department (Jim Song)
U.S. Fish and Wildlife Service (Shawn Cirton)
Illinois Department of Natural Resources (Adam Rawe)
MG2A (Mike Gingerich)

Appendix B

Representative Images from the Mussel Survey

Representative Images from the Mussel Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 1. Looking at the left descending bank, project centerline.

Photograph 2. Looking at the right descending bank, project centerline.

Representative Images from the Mussel Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 3. Looking at the left descending bank, downstream transects.

Photograph 4. Looking upstream from the survey area.

Representative Images from the Mussel Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 5. Looking at the right descending bank, downstream transects.

Photograph 6. Looking downstream.

Representative Images from the Mussel Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 7. Federally and state listed Sheepnose.

Photograph 8. State threatened Black Sandshell.

Representative Images from the Mussel Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 9. State threatened Purple Wartyback.

Photograph 10. State threatened Spike.

Appendix C

Representative Images from the Fisheries Survey

Representative Images from the Fisheries Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 1.0 Smallmouth Bass

Photograph 2.0 Golden Redhorse

Representative Images from the Fisheries Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 3.0 Walleye

Photograph 4.0 Northern Hogsucker

Representative Images from the Fisheries Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 5.0 Bluntnose Minnow

Photograph 6.0 Common Logperch

Representative Images from the Fisheries Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 7.0 Banded Darter

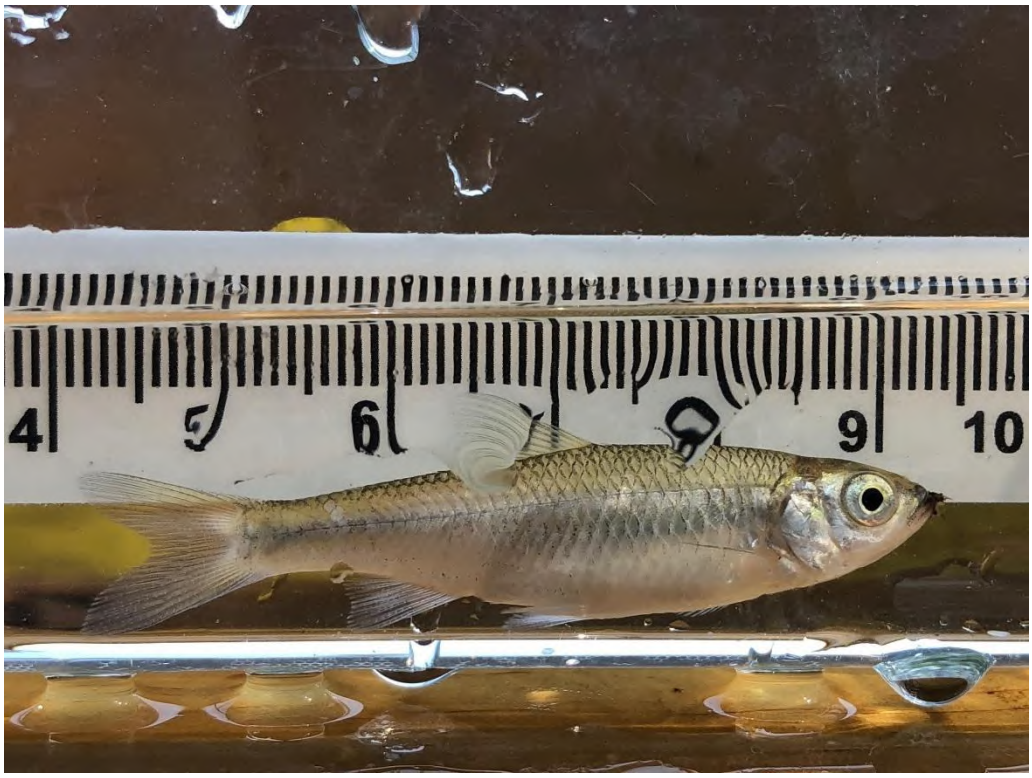
Photograph 8.0 River Redhorse

Representative Images from the Fisheries Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

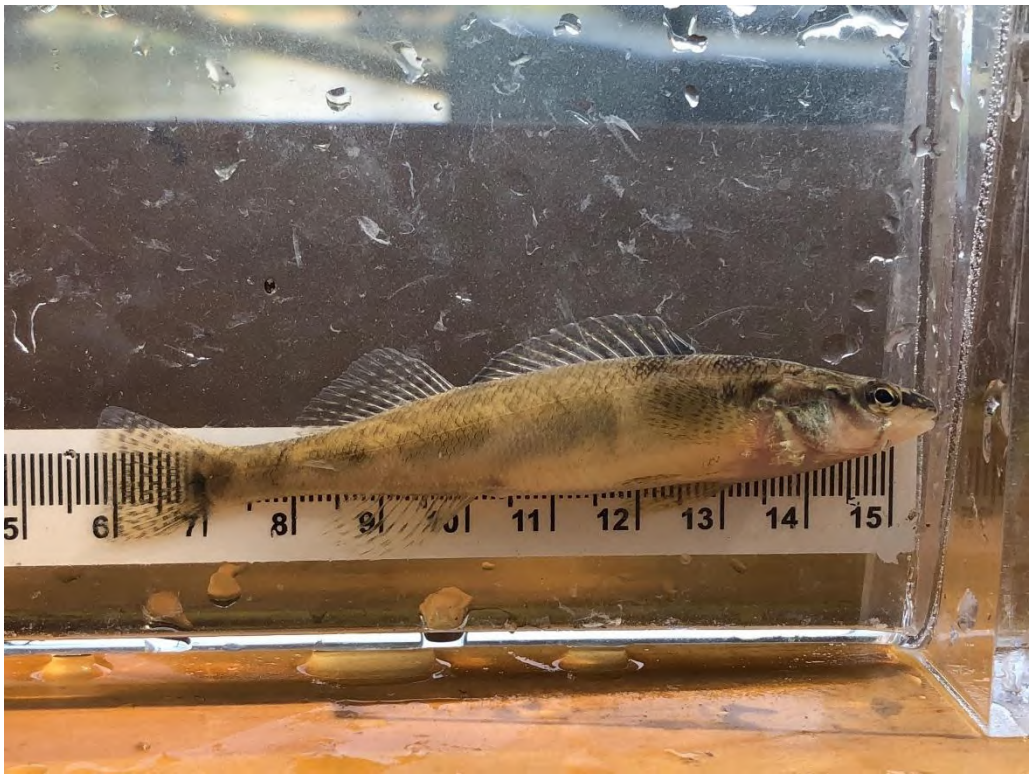
Photograph 9.0 Spotfin Shiner

Photograph 10. Mimic Shiner

Representative Images from the Fisheries Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.



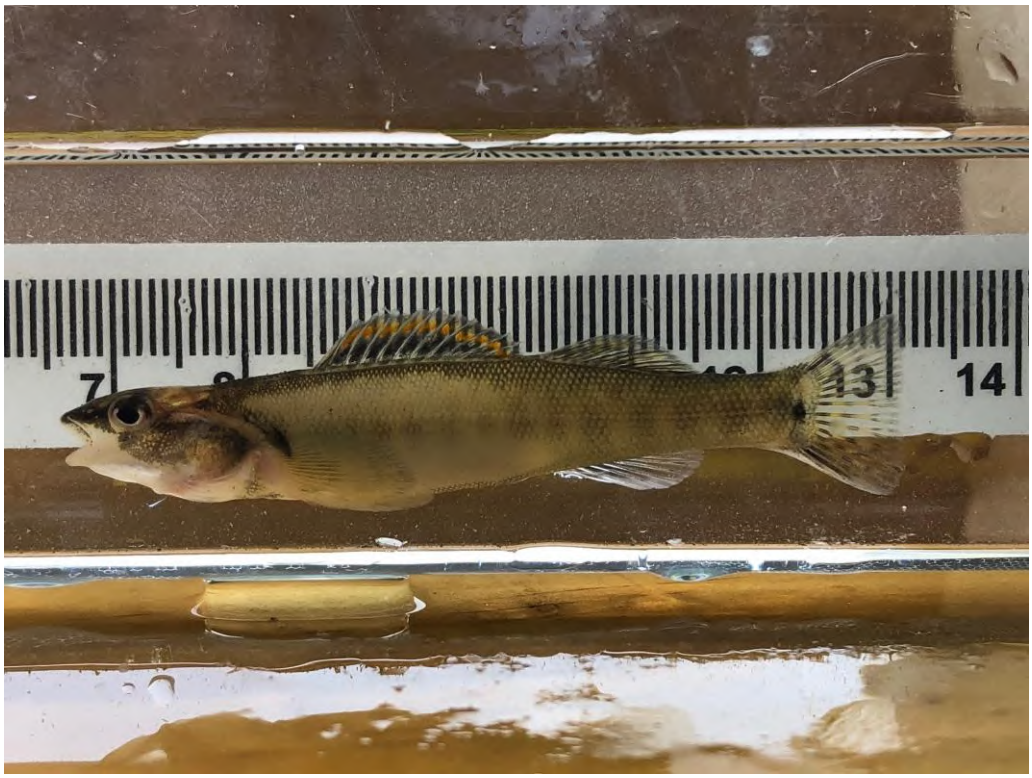
Photograph 11. Common Shiner



Photograph 12. Blackside Darter

Representative Images from the Fisheries Survey for the Proposed Intake, Godley Public Water District River Water Withdrawal Project.

Photograph 13. Spotted Sucker



Photograph 14. Slenderhead Darter

Attachment 2

Illinois Department of Natural Resources
Office of Water Resources
Permit
And Supporting Plan Sheets Prepared by
M. Gingerich, Gereaux & Associates

PN. 412- 034.

ILLINOIS
DEPARTMENT OF NATURAL RESOURCES

Illinois Department of
Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

JB Pritzker, Governor
Wayne A. Rosenthal, Director

Office of Water Resources • 2050 West Stearns Road • Bartlett, Illinois 60103

February 28, 2019

SUBJECT: Permit No. NE2019007
Water Intake Structure
Kankakee River
Will County, Application No. N20170135

Joe Cosgrove
Godley Public Water District
P.O. Box 130
Godley, Illinois 60407

Dear Mr. Cosgrove:

Enclosed is Illinois Department of Natural Resources, Office of Water Resources Permit No. NE2019007 authorizing the subject project. This permit does not supersede any other federal, state or local authorizations that may be required for the project. Upon receipt and review of this permit and all conditions included therein, please properly execute and return the attached acceptance slip within sixty (60) days from the date of this permit.

If any changes of the permitted work are found necessary, revised plans should be submitted promptly to this office for review and approval. Also, this permit expires on the date indicated in Condition (13). If unable to complete the work by that date, the permittee may make a written request for a time extension.

Please contact Bill Boyd of my staff at 847/608-3116 if you have any questions.

Sincerely,

Gary W. Jereb, P.E. CFM
Chief, Northeastern Illinois Regulatory Programs Section

GJ/BB:cjp
Enclosure

cc: Chicago District, U.S. Army Corps of Engineers
Will County Land Use Dept.
Mike Gingerich, M.Gingerich Gereaux & Associates ✓
Wes Cattoor, IDNR – Springfield
Nathan Grider, IDNR – Springfield
Jenny Skufca, IDNR - Springfield

PERMIT NO. NE2019007
DATE: February 28, 2019

State of Illinois
Department of Natural Resources, Office of Water Resources

Permission is hereby granted to:

Godley Public Water District
P.O. Box 130
Godley, Illinois 60407

to construct a dual level water intake structure and a temporary cofferdam in the floodway and public waters of the Kankakee River in the Northwest Quarter of Section 19, Township 32 North, Range 10 East of the Third Principal Meridian in Will County,

in accordance with an application dated October 4, 2017, and the plans and specifications entitled:

GODLEY PUBLIC WATER DISTRICT, PRELIMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN AND TREATMENT PLANT DESIGN SCHEMATIC, SHEETS 1, 2, 5 AND 7 OF 7, UNDATED, LAST REVISED DECEMBER 29, 2017, RECEIVED NOVEMBER 26, 2018, SHEETS 3 AND 4 OF 7, UNDATED, LAST REVISED FEBRUARY 1, 2018, RECEIVED FEBRUARY 11, 2019.

Examined and Recommended:

Gary W. Jereb, Chief
Northeastern IL Regulatory
Programs Section

Approval Recommended:

Loren A. Wobig, Director
Office of Water Resources

Approved:

Wayne A. Rosenthal, Director
Department of Natural Resources

This PERMIT is subject to the terms contained herein.

PERMIT NO. NE2019007

THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:

1) This permit is granted in accordance with the Rivers, Lakes and Streams Act "615 ILCS 5."

2) This permit does not convey title to the permittee or recognize title of the permittee to any submerged or other lands, and furthermore, does not convey, lease or provide any right or rights of occupancy or use of the public or private property on which the activity or any part thereof will be located, or otherwise grant to the permittee any right or interest in or to the property, whether the property is owned or possessed by the State of Illinois or by any private or public party or parties.

3) This permit does not release the permittee from liability for damage to persons or property resulting from the work covered by this permit, and does not authorize any injury to private property or invasion of private rights.

4) This permit does not relieve the permittee of the responsibility to obtain other federal; state or local authorizations required for the construction of the permitted activity; and if the permittee is required by law to obtain approvals from any federal or state agency to do the work, this permit is not effective until the federal and state approvals are obtained. If construction does not begin within two years of the date of this permit, the permittee must submit the project to EcoCat (http://dnr.illinois.gov/EcoPublic/) for an updated consultation under the Illinois Endangered Species Protection Act and the Illinois Natural Areas Preservation Act.

5) The permittee shall, at the permittee's own expense, remove all temporary piling, cofferdams, false work, and material incidental to the construction of the project. If the permittee fails to remove such structures or materials, the Department may have removal made at the expense of the permittee.

6) In public waters, if future need for public navigation or other public interest by the state or federal government necessitates changes in any part of the structure or structures, such changes shall be made by and at the expense of the permittee or the permittee's successors as required by the Department or other properly constituted agency, within sixty (60) days from receipt of written notice of the necessity from the Department or other agency, unless a longer period of time is specifically authorized.

7) The execution and details of the work authorized shall be subject to the review and approval of the Department. Department personnel shall have the right of access to accomplish this purpose.

8) Starting work on the activity authorized will be considered full acceptance by the permittee of the terms and conditions of the permit.

9) The Department in issuing this permit has relied upon the statements and representations made by the permittee; if any substantive statement or representation made by the permittee is found to be false, this permit will be revoked; and when revoked, all rights of the permittee under the permit are voided.

10) In public waters, the permittee and the permittee's successors shall make no claim whatsoever to any interest in any accretions caused by the activity.

11) In issuing this permit, the Department does not ensure the adequacy of the design or structural strength of the structure or improvement.

12) Noncompliance with the conditions of this permit will be considered grounds for revocation.

13) If the construction activity permitted is not completed on or before December 31, 2022 this permit shall cease and be null and void.

THIS PERMIT IS SUBJECT TO THE FOLLOWING SPECIAL CONDITIONS:

SPECIAL CONDITIONS
PERMIT NO. NE2019007
Godley Public Water District

SPECIAL CONDITIONS
PERMIT NO. NE2019007
Godley Public Water District

a) This Permit may be modified or altered as necessary to satisfy the purposes set forth in Section 3704.10 of the Department's Regulation of Public Waters (17 Ill. Admin. Code 3704).

b) Within one year of the date of this Permit, the Permittee shall execute an Incidental Take Authorization (ITA) with the Department's Office of Resource Conservation for the Area of Direct Impact (ADI) at the location of the intake facility for the state and federally-endangered Sheepnose (*Plethobasus cyphyus*), and state-threatened Black Sandshell (*Ligumia recta*), Purple Wartyback (*Cyclonaias tuberculata*), and Spike (*Elliptio dilatata)* mussels. The ITA shall include a salvage effort of freshwater mussels in the ADI.

c) To avoid and minimize entrainment and impingement of aquatic organisms on the intake structure, intake velocities shall not exceed 1.5 ft./sec. and screen openings shall not exceed 0.5 inch.

d) The Permittee may only withdraw water pursuant to this Permit when the flow in the Kankakee River, as determined from the data collected at the U.S. Geological Survey stream gage at Wilmington, Illinois (No. 05527500) is above 600 cubic feet per second. This restriction may be amended if further study and/or modeling by the Permittee demonstrates an alternative flow restriction is sufficient in protecting mussel beds in the Kankakee River during low flow events.

e) The Permittee shall not engage in any in-stream construction activities in the Kankakee River between April 1 and June 30 of any year to protect the spawning season of state-listed fishes unless otherwise negotiated in an Incidental Take Authorization with the Department's Office of Resource Conservation.

f) The temporary cofferdam herein authorized shall not be constructed in a way which will interfere with navigation or create a hazard to boating safety and shall be removed upon completion of construction of the intake structure.

g) Within one year of the date of this Permit, the Permittee shall submit an adaptive public safety plan to the Department for review which addresses potential public safety risks attributable to the water intake structures herein authorized.

GODLEY PUBLIC WATER DISTRICT
PRELIMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN
AND TREATMENT PLANT DESIGN SCHEMATIC

NOTES

NOTES AND SPECIFICATIONS

THE FOLLOWING STANDARD SPECIFICATIONS AND NOTES AND THE NOTES, DRAWINGS, AND DETAILS FOUND THROUGHOUT THESE PLAN SHEETS (FINAL PLANS AND SPECIFICATIONS) ARE MEANT TO ASSIST IN THE CONSTRUCTION OF VARIOUS IMPROVEMENTS. THESE FINAL PLANS AND SPECIFICATIONS ARE NOT MEANT TO DEFINE A CONTRACTUAL RELATIONSHIP BETWEEN THE OWNER, M. GINGERICH GEREAUX AND ASSOCIATES (MG2A), OR A CONTRACTOR. THE RELATIONSHIP BETWEEN THE OWNER AND MG2A IS TYPICALLY DEFINED IN A PROFESSIONAL SERVICES AGREEMENT. MG2A HAS NO CONTRACTUAL RELATIONSHIP WITH THE CONTRACTOR(S). **MG2A RECOMMENDS THE OWNER AND ANY CONTRACTOR(S) USING THESE FINAL PLANS AND SPECIFICATIONS ENTER IN TO AN AGREEMENT TO CLEARLY DEFINE THE OWNER'S AND CONTRACTOR'S EXPECTATIONS REGARDING, THE OWNERS RESPONSIBILITIES, THE CONTRACTORS RESPONSIBILITIES AND SCOPE OF WORK, PERFORMANCE SCHEDULE, COMPENSATION, AND OTHER GENERAL TERMS AND CONDITIONS.**

STANDARD SPECIFICATIONS

CONSTRUCTION SHALL BE PERFORMED ACCORDING TO THE FOLLOWING COMMONLY REFERENCED STANDARD SPECIFICATIONS. IN CASE OF ANY CONFLICT BETWEEN THESE STANDARD SPECIFICATIONS AND THE NOTES, DRAWINGS, AND DETAILS FOUND THROUGHOUT THESE PLAN SHEETS SHALL TAKE PRECEDENTS.

1. ALL APPLICABLE **ROAD IMPROVEMENTS, DRAINAGE FEATURES, LANDSCAPING, RESTORATION, WORK ZONE TRAFFIC CONTROL AND OTHER CONSTRUCTION ACTIVITIES** SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S "IDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION", CURRENT EDITION AND APPLICABLE STANDARDS. ***(IDOT SPECIFICATIONS)***
2. ALL APPLICABLE **SOIL EROSION CONTROL MEASURES** SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH NRCS ILLINOIS URBAN MANUAL, CURRENT EDITION, ALONG WITH APPLICABLE STANDARDS. ***(NRCS SPECIFICATIONS)***
3. **WATER MAIN, SANITARY SEWERS AND STORM SEWERS** SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS' "STANDARD SPECIFICATIONS FOR WATER AND SEWER", CURRENT EDITION. ***(ISPE SPECIFICATIONS)***

GENERAL NOTES

1. MG2A HAS NOT BEEN RETAINED OR COMPENSATED TO PROVIDE DESIGN AND CONSTRUCTION REVIEW SERVICES RELATING TO THE CONTRACTORS SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED FOR THE CONTRACTOR TO PERFORM HIS WORK.
2. CONTRACTOR(S) SHALL COMPLY WITH ALL LOCAL AND STATE SAFETY LAWS, REGULATIONS AND ORDINANCES; AND FEDERAL SAFETY REGULATIONS AS OUTLINED IN THE LATEST REVISIONS OF THE FEDERAL SAFETY STANDARDS AND WITH ALL PROVISIONS AND REGULATIONS OF THE OSHA STANDARDS. EACH CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SAFE WORKING PLACE FOR HIS EMPLOYEES. **CONTRACTOR(S) ARE RESPONSIBLE FOR THE SUPERVISION, DIRECTION AND CONDUCT OF THEIR EMPLOYEES, AGENTS, MATERIAL SUPPLIERS AND VENDORS.**
3. TRAFFIC CONTROL SHALL BE USED WHEN APPROPRIATE AND SHALL BE IN ACCORDANCE WITH THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARDS. SUCH TRAFFIC CONTROL SHALL BE CONSIDERED INCIDENTAL TO THE WORK UNLESS OTHERWISE SPECIFIED IN AN AGREEMENT BETWEEN THE OWNER AND CONTRACTOR.
4. THE DRAWINGS, SPECIFICATIONS, IDEAS, DESIGNS AND ARRANGEMENTS PRESENTED ON THESE DRAWINGS ARE AND SHALL REMAIN THE PROPERTY OF MG2A, AND NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN CONNECTION WITH ANY WORK OR PROJECT FOR WHICH THEY HAVE BEEN PREPARED AND DEVELOPED WITHOUT THE WRITTEN CONSENT OF MG2A.
5. ANY CONTRACTOR(S) USING THESE DRAWINGS SHALL OBTAIN AND THEREAFTER KEEP IN FORCE THROUGH THE DURATION OF THAT USE CUSTOMARY AND APPROPRIATE INSURANCE COVERAGE, WHICH SHALL INCLUDE WORKERS COMPENSATION AND EMPLOYERS LIABILITY, COMMERCIAL GENERAL LIABILITY, COMMERCIAL AUTOMOBILE LIABILITY, AND UMBRELLA LIABILITY. **CERTIFICATE(S) OF INSURANCE BY THE INSURER(S) ISSUING THE POLICIES SHALL BE FILED WITH MG2A AND THE OWNER PRIOR TO COMMENCEMENT OF WORK DESCRIBED ON THESE DRAWINGS.**
6. ANY CONTRACTOR(S) USING THESE DRAWINGS, BY SAID USE, SHALL BE SUBJECT TO THE INDEMNIFICATION PROVISIONS OF THE "LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC" SECTION OF THE **IDOT SPECIFICATIONS**, WHERE, THE OWNER AND MG2A SHALL BE SUBSTITUTED FOR THE WORD "DEPARTMENT" IN THESE PROVISIONS.
7. EQUALS SHALL BE DETERMINED BY MG2A AND OWNER ONLY AND MAY REQUIRE THE APPROVAL OF VARIOUS AGENCIES PERMITTING THE WORK.
8. MG2A, THE OWNER, AND GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK ARE TO BE NOTIFIED PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS NOT DESCRIBED ON THESE DRAWINGS OR CONSTRUCTING IMPROVEMENTS DIFFERENTLY THAN AS DESCRIBED ON THESE DRAWINGS (FIELD CHANGES). **GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THIS WORK INCLUDE: GODLEY PUBLIC WATER DISTRICT, ILLINOIS DEPARTMENT OF NATURAL RESOURCES, U.S. ARMY CORP OF ENGINEERS, AND THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.**
9. **ALL PROPOSED ELEVATIONS SHOWN ON THE PLANS ARE FINISHED SURFACE ELEVATIONS UNLESS OTHERWISE SPECIFIED.**
10. PERMITS SHALL BE OBTAINED FROM ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITY. MG2A HAS NOT OBTAINED PERMITS FOR THE WORK. THE OWNER OR CONTRACTOR SHALL OBTAIN ALL PERMITS.
11. MG2A AND THE OWNER HAVING JURISDICTION OVER THE WORK ARE TO BE NOTIFIED BY THE CONTRACTOR A MINIMUM OF 24 HOURS PRIOR TO COVERING ANY EXPOSED SUBGRADE, PLACING ANY FILL, BACKFILLING SANITARY, WATER, OR STORM LINES, PLACING BASE COURSE STONE, PLACING CONCRETE, OR PLACING ASPHALT.

EXISTING FIELD TILES, UTILITIES AND CONFLICTS NOTES

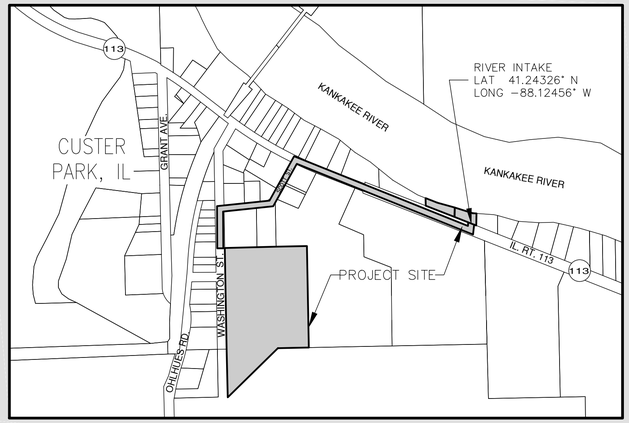
1. ANY FIELD TILES ENCOUNTERED DURING CONSTRUCTION SHALL BE REPAIRED AND RETURNED TO ITS ORIGINAL INTEGRITY, ROUTE, AND FUNCTION, AND SHALL NOT BE CONNECTED TO STORM SEWER SYSTEM(S).
2. THE CONTRACTOR SHALL CALL JULIE # 1-800-892-0123 PRIOR TO ANY EXCAVATION TO ASSURE ALL UTILITIES ARE LOCATED PROPERLY. DAMAGE TO UTILITIES SHALL BE PROMPTLY REPORTED TO THE UTILITY OWNER AND REPAIRED AT THE CONTRACTORS EXPENSE.
3. EXISTING STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND OTHER UTILITIES MAY EXIST BUT MAY NOT HAVE BEEN MARKED BY JULIE. THESE UTILITIES MAY NOT APPEAR ON THE FINAL PLANS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL CONTACT MUNICIPAL, COUNTY, AND STATE GOVERNMENTAL AGENCIES THAT MAY REASONABLY BE EXPECTED TO HAVE UTILITIES ON OR NEAR AREAS TO BE EXCAVATED IN ORDER TO HAVE THE UTILITIES LOCATED PROPERLY.
5. THE LOCATION OF AN UNDERGROUND UTILITY IS OFTEN NOT KNOWN. THE ACTUAL DEPTH AND ALIGNMENT OF UTILITIES HAVE NOT BEEN MEASURED BY MG2A. THE LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR AT HIS OWN EXPENSE PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MG2A AND THE UTILITY OWNER TO RESOLVE ANY UTILITY OR OTHER CONFLICTS NOT INDICATED WITHIN THE PLANS PRIOR TO INSTITUTING ANY CHANGES.

EARTHWORK / SEEDING NOTES

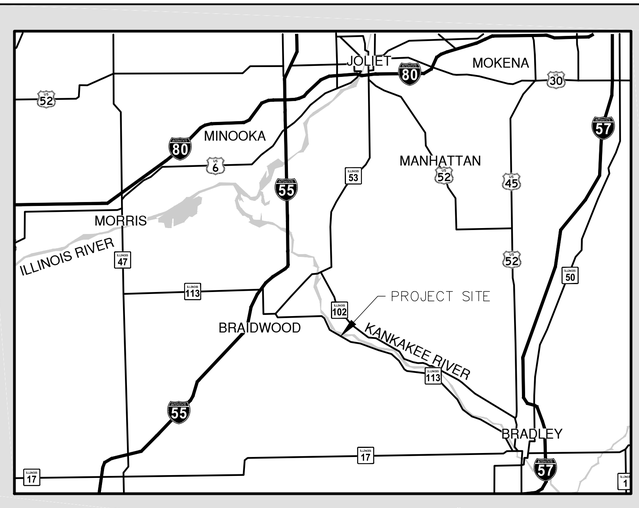
1. **THE EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THESE PLANS SHALL BE CONSIDERED AGREED TO BY THE CONTRACTOR(S).** THE CONTRACTOR(S) MAY, AT THERE OWN COST, COLLECT ADDITIONAL TOPOGRAPHIC INFORMATION PRIOR TO COMMENCING WITH WORK DESCRIBED ON THESE PLANS. ANY DISCREPANCIES BETWEEN TOPOGRAPHIC DATA COLLECTED BY THE CONTRACTOR(S) AND THE EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THESE PLANS SHALL BE REPORTED TO MG2A AND THE OWNER PRIOR TO COMMENCEMENT OF WORK.
2. SURPLUS EXCAVATED MATERIALS SHALL BE REMOVED FROM THE SITE.
3. THE CONTRACTOR SHALL PROVIDE ALL EARTH MATERIAL REQUIRED TO ACHIEVE THE WORK DESCRIBED IN THESE FINAL PLANS AND SPECIFICATIONS. THIS INCLUDES PROVIDING AND HAULING SUITABLE FILL TO THE SITE AS MAY BE NECESSARY.
4. ALL FILLS SHALL BE COMPACTED LIFTS WITH A MAXIMUM THICKNESS OF 6 INCHES OR AS OTHERWISE SPECIFIED BY THE OWNER OR OWNERS REPRESENTATIVE.
5. PRIOR TO COMMENCING ANY FILL OPERATIONS IN STRUCTURAL BUILDING, PAVEMENT OR SIDEWALK AREAS, ALL TOPSOIL IS TO BE REMOVED.
6. UPON STRIPPING OF TOPSOIL FROM STRUCTURAL, PAVEMENT AND/OR UTILITY AREAS AND PRIOR TO PLACEMENT OF FILL OF ANY TYPE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND/OR THE OWNER.
7. IN-SITU SOILS AND EARTH FILL PLACED IN STRUCTURAL AND PAVEMENT AREAS IN SHALL BE EVALUATED USING A FULLY LOADED EXCAVATION HAULING TRUCK (PROOF ROLLED) PRIOR TO COMMENCEMENT OF FURTHER WORK UNLESS OTHERWISE SPECIFIED BY THE OWNER'S REPRESENTATIVE.
8. THE CONTRACTOR SHALL CONTACT THE OWNER PRIOR TO COMMENCING CONSTRUCTION TO DETERMINE IF ANY SOIL STUDIES HAVE BEEN COMPLETED OR ANY RECOMMENDATIONS HAVE BEEN REPORTED REGARDING EARTHWORK.
9. THE CONTRACTOR SHALL CONTACT THE OWNER PRIOR TO COMMENCING CONSTRUCTION TO DETERMINE IF ANY PARTICULAR TESTING OF SOIL SURFACES OR FILL SOILS IS REQUIRED.
10. FINAL TOPSOIL THICKNESS IN LANDSCAPE AREAS SHALL BE A MINIMUM OF 6" UNLESS OTHERWISE SPECIFIED BY THE OWNERS REPRESENTATIVE.
11. UNLESS OTHER WISE AGREED TO BY THE OWNER AND CONTRACTOR, EARTHWORK INCLUDES ALL CLEARING, GRUBBING, TREE REMOVAL; EXCAVATION, FILL; OVERHAUL, FINISHED GRADING, AND PLACEMENT OF TOPSOIL TO ACHIEVE THE WORK DESCRIBED IN THESE FINAL PLANS AND SPECIFICATIONS.

U.S. ARMY CORPS OF ENGINEERS GENERAL NOTES

1. EXCEPT AS ALLOWED UNDER CONDITION 4, 5 AND 6, ANY SPOIL MATERIAL EXCAVATED, DREDGED OR OTHERWISE PRODUCED MUST NOT BE RETURNED TO THE WATERWAY BUT MUST BE DEPOSITED IN A SELF-CONTAINED AREA IN COMPLIANCE WITH ALL STATE STATUTES, REGULATIONS AND PERMIT REQUIREMENTS WITH NO DISCHARGE TO WATERS OF THE STATE UNLESS A PERMIT HAS BEEN ISSUED BY THE ILLINOIS EPA. ANY BACKFILLING MUST BE DONE WITH CLEAN MATERIAL AND PLACED IN A MANNER TO PREVENT VIOLATION OF APPLICABLE WATER QUALITY STANDARDS.
2. ALL AREAS AFFECTED BY CONSTRUCTION MUST BE MULCHED AND SEEDED AS SOON AFTER CONSTRUCTION AS POSSIBLE. THE APPLICANT SHALL UNDERTAKE NECESSARY MEASURES AND PROCEDURES TO REDUCE EROSION DURING CONSTRUCTION. INTERIM MEASURES TO PREVENT EROSION DURING CONSTRUCTION SHALL BE TAKEN AND MAY INCLUDE THE INSTALLATION OF STAKED STRAW BALES, SEDIMENTATION BASINS AND TEMPORARY MULCHING. ALL CONSTRUCTION WITHIN THE WATERWAY SHALL BE CONSTRUCTED DURING ZERO OR LOW FLOW CONDITIONS.
3. THE APPLICANT SHALL IMPLEMENT EROSION CONTROL MEASURES CONSISTENT WITH THE "ILLINOIS URBAN MANUAL" (IEPA/USDA, NRCS; 2016).
4. BACKFILL USED IN STREAM CROSSING TRENCHES SHALL BE PREDOMINANTLY SAND OR LARGER SIZE MATERIAL, WITH LESS THAN 20% PASSING A #230 U.S. SIEVE.
5. BACKFILL USED WITHIN TRENCHES PASSING THROUGH SURFACE WATERS OF THE STATE, EXCEPT WETLAND AREAS, SHALL BE CLEAN COURSE AGGREGATE, GRAVEL OR OTHER MATERIAL WHICH WILL NOT CAUSE SILTATION, PIPE DAMAGE DURING PLACEMENT, OR CHEMICAL CORROSION IN PLACE. EXCAVATED MATERIAL MAY BE USED ONLY IF:
   a) PARTICLE SIZE ANALYSIS IS CONDUCTED AND DEMONSTRATES THE MATERIAL TO BE AT LEAST 80% SAND OR LARGER SIZE MATERIAL, USING #230 U.S. SIEVE; OR
   b) EXCAVATION AND BACKFILLING ARE DONE UNDER DRY CONDITIONS.
6. BACKFILL USED WITHIN TRENCHES PASSING THROUGH WETLAND AREAS SHALL CONSIST OF CLEAN MATERIAL WHICH WILL NOT CAUSE SILTATION, PIPE DAMAGE DURING PLACEMENT, OR CHEMICAL CORROSION IN PLACE. EXCAVATED MATERIAL SHALL BE USED TO THE EXTENT PRACTICABLE, WITH THE UPPER SIX (6) TO TWELVE (12) INCHES BACKFILLED WITH THE TOPSOIL OBTAINED DURING TRENCH EXCAVATION.
7. ASPHALT, BITUMINOUS MATERIAL AND CONCRETE WITH PROTRUDING MATERIAL SUCH AS REINFORCING BAR OR MESH SHALL NOT BE 1) USED FOR BACKFILL, 2) PLACED ON SHORELINES/STREAM BANKS, OR 3) PLACED IN WATERS OF THE STATE.
8. APPLICANTS THAT USE SITE DEWATERING TECHNIQUES IN ORDER TO PERFORM WORK IN WATERWAYS FOR CONSTRUCTION ACTIVITIES APPROVED UNDER REGIONAL PERMITS 1 (RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS), 2 (RECREATION PROJECTS), 3 (TRANSPORTATION PROJECTS), 7 (TEMPORARY CONSTRUCTION ACTIVITIES), 9 (MAINTENANCE), OR 12 (BRIDGE SCOUR PROTECTION) SHALL MAINTAIN FLOW IN THE STREAM DURING SUCH CONSTRUCTION ACTIVITY BY UTILIZING DAM AND PUMPING, FLUMING, CULVERTS OR OTHER SUCH TECHNIQUES.
9. THE APPLICANT SHALL IMPLEMENT BEST MANAGEMENT PRACTICES (BMPS) TO PROTECT WATER QUALITY, PRESERVE NATURAL HYDROLOGY AND MINIMIZE THE OVERALL IMPACTS TO AQUATIC RESOURCES DURING AND AFTER CONSTRUCTION.
10. LOW GROUND-PRESSURE EQUIPMENT IS REQUIRED FOR WORK IN WETLANDS. HOWEVER, AFTER CAREFUL CONSIDERATION, IF THE DISTRICT ACCEPTS A PROPOSAL TO USE HEAVY EQUIPMENT TO ACCOMPLISH THE WORK, THE PLACEMENT OF TIMBER MATS OR OTHER PROTECTIVE MEASURES MUST BE UTILIZED TO MINIMIZE SOIL DISTURBANCE. LUMBER TO BE USED FOR TEMPORARY CONSTRUCTION ACTIVITIES MUST BE FREE OF ALL CHEMICAL TREATMENT.
11. EARTHEN GRANULAR FILL USED FOR CONSTRUCTION OF TEMPORARY STRUCTURES IN WATERS OF THE STATE SHALL HAVE LESS THAN 20% PASSING A #230 U.S. SIEVE.
12. TEMPORARY FILL TO WATERS OF THE U.S. MUST BE LIMITED TO THE MINIMUM NECESSARY TO COMPLETE THE ACTIVITY.
13. TEMPORARY FILL MUST BE COMPOSED OF NON-ERODIBLE MATERIALS AND BE CONSTRUCTED TO WITHSTAND EXPECTED HIGH FLOWS.
14. THE COFFERDAM MUST BE CONSTRUCTED FROM THE UPLAND AREA AND NO EQUIPMENT MAY ENTER THE WATER AT ANY TIME.
15. ALL MATERIALS USED FOR TEMPORARY CONSTRUCTION ACTIVITIES MUST BE MOVED TO AN UPLAND AREA IMMEDIATELY FOLLOWING COMPLETION OF THE CONSTRUCTION ACTIVITY.
16. IN WETLAND AREAS, THE TRENCH MUST BE BACKFILLED WITH TOPSOIL EXCAVATED FROM THE TRENCH IN THE SAME STRATIFICATION IN WHICH IT WAS REMOVED. FOR EXAMPLE, THE UPPER HORIZON OF THE WETLAND SOIL MUST BE PLACED BACK AT THE GROUND SURFACE TO ALLOW FOR SUCCESSFUL REVEGETATION OF WETLAND PLANTS.



SITE VICINITY MAP



SITE LOCATION MAP

BENCHMARK

BENCHMARK : GPS SURVEY USED. CONTROL POINT SET IRON ROD:
ELEV: 559.38

INDEX OF PLAN SHEETS

LEGEND

EXISTING	PROPOSED	
⊙	⊙	STORM MANHOLE
+650.00	+P650.00	ELEVATION POINT
600	600	CONTOUR LINE
		STORM SEWER
		SANITARY SEWER
GAS		GAS MAIN
OHU		TELEPHONE LINE
UGE		UNDERGROUND ELECTRIC
WM		WATER MAIN
	S	SILT FENCE
	RW	RAW WATER PIPE
	DS	TO DISTRIBUTION SYSTEM PIPE
		GAS VALVE
		WATER VALVE
		FIRE HYDRANT
		POWER POLE
		LIGHT POLE
		EXISTING SIGN
P.U.E.		PUBLIC UTILITY EASEMENT
D.E.		DRAINAGE EASEMENT
		PROPOSED PCC CONCRETE
		PROPOSED EROSION CONTROL BLANKET
		EXISTING ASPHALT

PLAN EDITION MILESTONES		
10/4/2017	JMG	Submitted to IDNR/ACOE/EPA
12/29/2017	JMG	Changes Per ACOE/IDNR Comments
02/01/2018	JMG	Submitted to WD & Cook Co Soil & Water

M. GINGERICH, GEREAUX & ASSOCIATES
ENGINEERING * PLANNING * SURVEYING
BRADLEY OFFICE
Bradley Office
240 N. Industrial Drive
Bradley, Illinois 60915
PH: 815-939-4620
FX: 815-939-9810
Manhattan Office
25620 S. Gougar Rd
Manhattan, Illinois 60442
PH: 815-478-9680
FX: 815-478-9685
www.mg2a.com

DESIGN: MAG
DRAWING: JMG/CAG
CHECKED: MAG
APPROVED: —

PROFESSIONAL DESIGN FIRM #184.001808

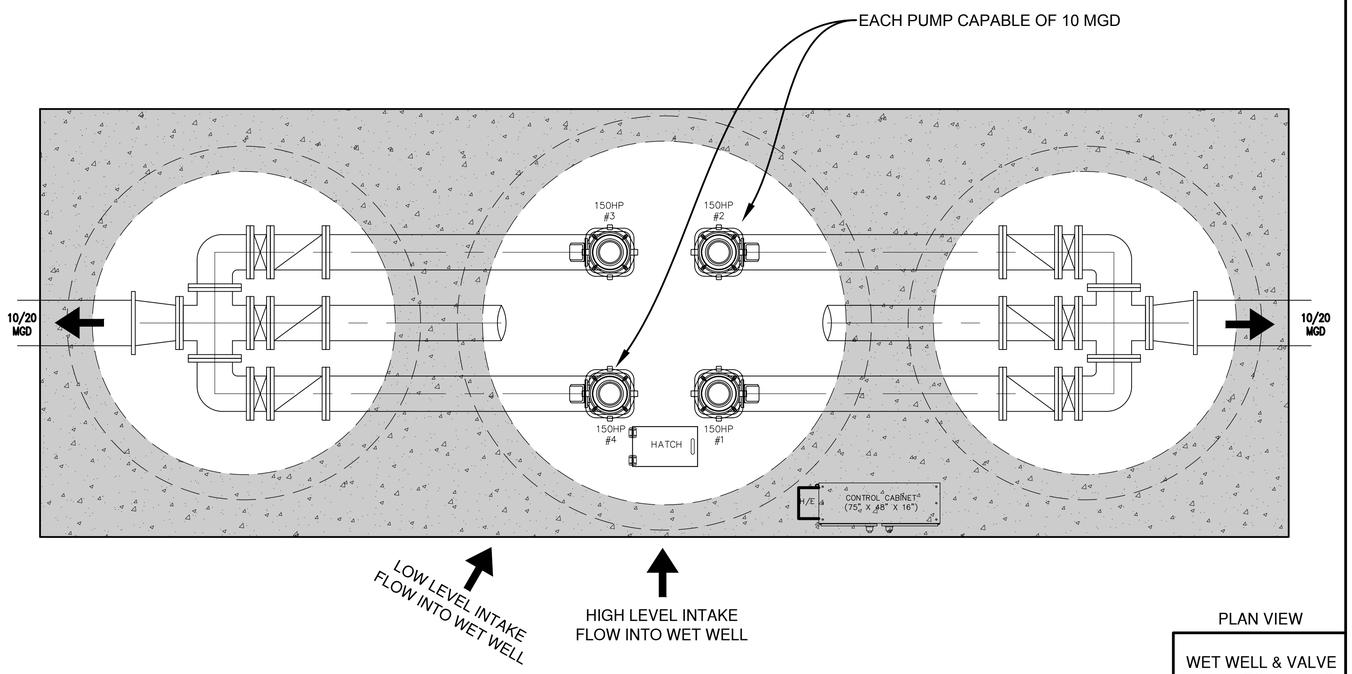
GODLEY PUBLIC WATER DISTRICT
PRELIMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN AND TREATMENT PLANT DESIGN SCHEMATIC

COVER SHEET

SHEET NO. 1 OF 7

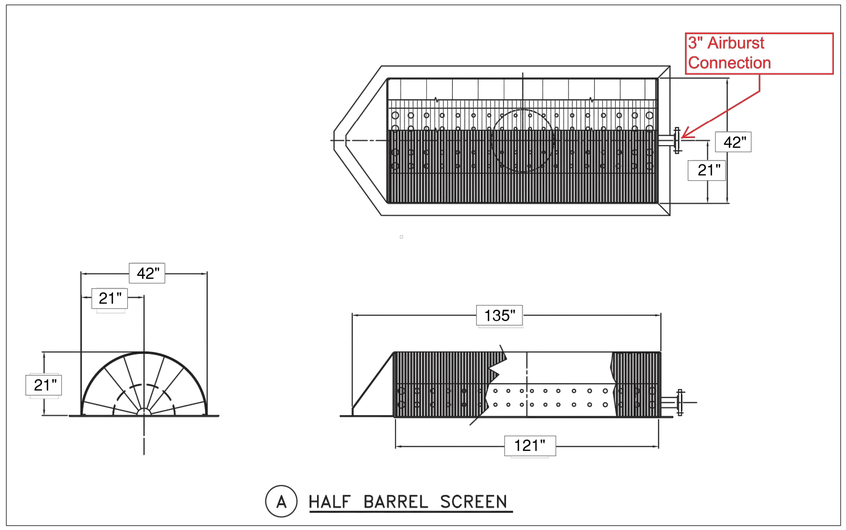
JOB NO. M12-034

X:\Projects\M-Jobs\M12-GODLEY\M12-034 Kankakee River Water Withdrawl\DWG\B-Site\C1 - Cover.dwg, 2/1/2018 11:23:09 AM, jmgingerich



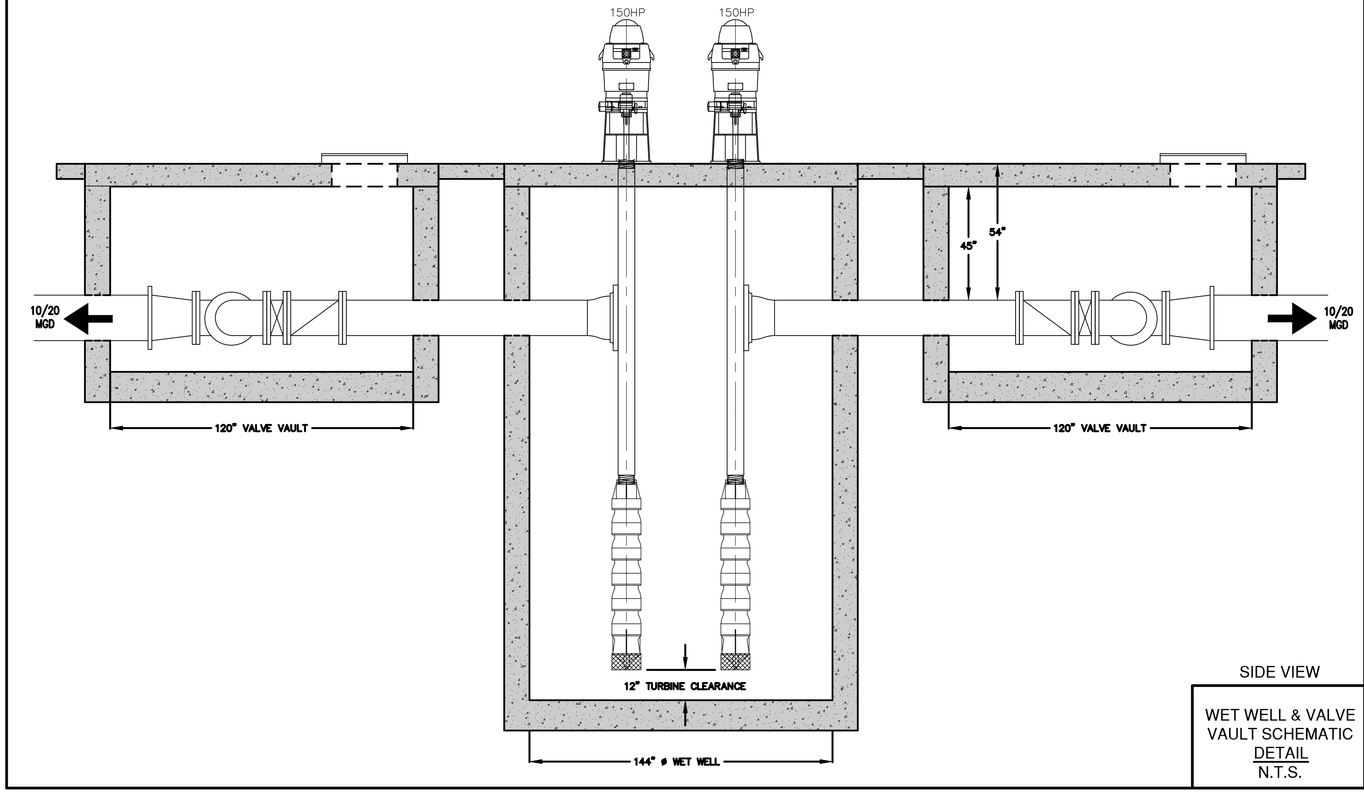
PLAN VIEW

WET WELL & VALVE VAULT SCHEMATIC
DETAIL
N.T.S.



A HALF BARREL SCREEN

42" HALF BARREL INTAKE SCREEN
DETAIL
N.T.S.



SIDE VIEW

WET WELL & VALVE VAULT SCHEMATIC
DETAIL
N.T.S.

42" diameter Screen Characteristics	
FLOW REQUIRED (gpm)	6,944 (10 MGD)
SCREEN STYLE	HALF BARREL W/CORE TUBE
SCREEN DIA. (in)	42.00
CALCULATED CAPACITY (gpm)	6970.00
WIRE SIZE	69.00
SLOT SIZE (in)	0.13
OPEN AREA %	64%
FLOW CRITERIA	MAXIMUM SLOT VELOCITY
FLOW VELOCITY (FPS)	0.50
CUSTOM OUTLET DIA (in)	36.00
CONES REQ'D	ONE
MATERIAL	304SS
DESIGN PRESSURE (ft)	20.00
DESIGN PRESSURE (psi)	8.70
AIR BURST PIPING LENGTH (Ft)	450.00
PRES. DROP THRU ASSEMBLY (in)	4.37
TOTAL FINISHED WEIGHT (lbs)	1070.00
APPROXIMATE LENGTH (in)	142.00

PLAN EDITION MILESTONES

DATE	BY	DESCRIPTION
10/4/2017	JMG	Submitted to IDNR/ACOE/FEPA
12/29/2017	JMG	Changes Per ACOE/IDNR Comments
02/01/2018	JMG	Submittal to Will S. Cook Soil & Water

M. GINGERICH, GEREAUX & ASSOCIATES
ENGINEERING * PLANNING * SURVEYING
BRADLEY OFFICE
Bradley Office
240 N. Industrial Drive
Bradley, Illinois 60915
PH: 815-939-4620
FX: 815-939-9810
Manhattan Office
25620 S. Gougar Rd
Manhattan, Illinois 60442
PH: 815-478-9680
FX: 815-478-9685
www.mga.com

DESIGN: MAG
DRAWING: JMG/CAG
CHECKED: MAG
APPROVED: –

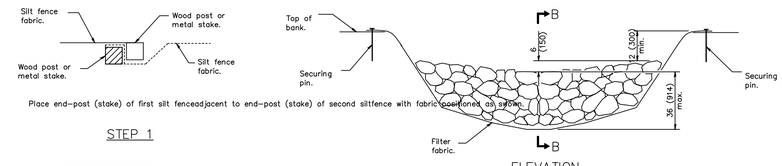
PROFESSIONAL DESIGN FIRM #184.001808

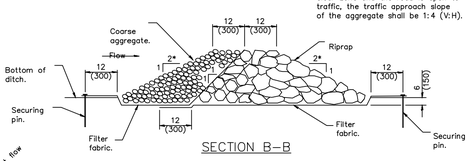
GODLEY PUBLIC WATER DISTRICT
PRELIMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN AND TREATMENT PLANT DESIGN SCHEMATIC

WITHDRAWAL DETAILS 1/2

SHEET NO. 2 OF 7

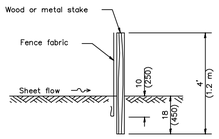
JOB NO. M12-034



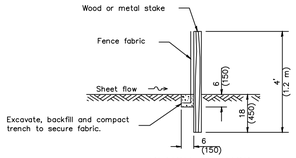


AGGREGATE DITCH CHECK

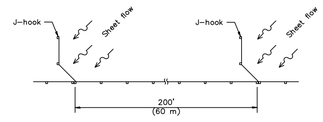
- When the ditch check is within the clear zone and the road is open to traffic, the traffic approach slope of the aggregate shall be 1:4 (V:H).



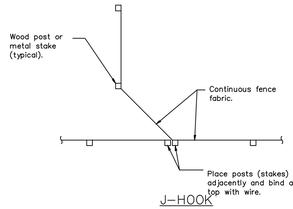
SLICE METHOD



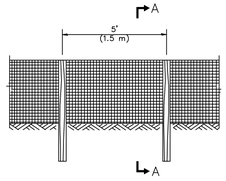
TRENCH METHOD



SILT FILTER J-HOOK PLACEMENT



J-HOOK



SILT FILTER FENCE AS A PERIMETER EROSION BARRIER

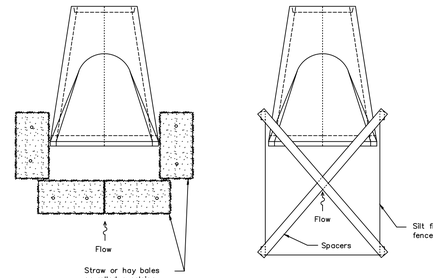
SECTION A-A

GENERAL NOTES

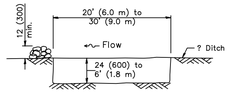
The installation details and dimensions shown for perimeter erosion barriers shall also apply for inlet and pipe protection.

All dimensions are in inches (millimeters) unless otherwise shown.

TEMPORARY EROSION CONTROL SYSTEMS
(Sheet 1 of 2)
STANDARD 280001-06

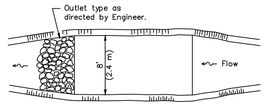


INLET AND PIPE PROTECTION



The performance of the basin will improve if put into a series.

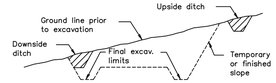
ELEVATION



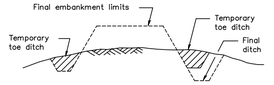
The long dimension should be parallel with the direction of the flow. Accumulated silt shall be removed anytime the basins become 75% filled.

PLAN

SEDIMENT BASIN



TYPICAL CUT CROSS-SECTION



TYPICAL FILL CROSS-SECTION

TEMPORARY DITCHES FOR CUT & FILL SECTIONS

TEMPORARY EROSION CONTROL SYSTEMS
(Sheet 2 of 2)
STANDARD 280001-06

PLAN EDITION MILESTONES

DESIGN ENGINEER	DATE	DESCRIPTION
MAG	10/4/2017	Submittal to IDNR/ACOE/EPA
JMG	12/29/2017	Changes Per ACOE/IDNR Comments
JMG	02/01/2018	Submittal to Will S. Cook Soil & Water

M. GINGERICH, GEREAUX & ASSOCIATES | BRADLEY OFFICE
ENGINEERING * PLANNING * SURVEYING
Bradley Office
240 N. Industrial Drive
Bradley, Illinois 60915
PH. 815-933-7450
FX. 815-939-9810
Manhattan Office
25620 S. Gougar Rd
Manhattan, Illinois 60442
PH. 815-478-9600
FX. 815-478-9685
www.mgza.com

DESIGN: MAG
DRAWING: JMG/CAG
CHECKED: MAG
APPROVED: –

PROFESSIONAL DESIGN FIRM #184.001808

HENDRICK SCREEN CO STD TOLERANCES

HENDRICK QUALITY DOCUMENT	Rev. No.: 1	Rev. Date: 08/21/2014	Doc. No.: HSC 01
	SECTION: Monitoring & Measuring of Product		Page No.: 1 OF 1

HSC Standard Tolerances

FLAT & CURVED PANELS
DIMENSIONAL TOLERANCES

Fractional	Under 60”	± 1/8”
	60” through 120”	± 3/16”
	Over 120”	± 1/4”
Decimal	2 places	± .050”
	3 places	± .010”
Squareness	Diagonals shall be equal within:	
	36” and under	1/8”
	over 36” through 72”	3/16”
	over 72”	1/4”
Flatness	Screens to be flat within 1/4” all planes	

CYLINDERS
DIMENSIONAL TOLERANCES

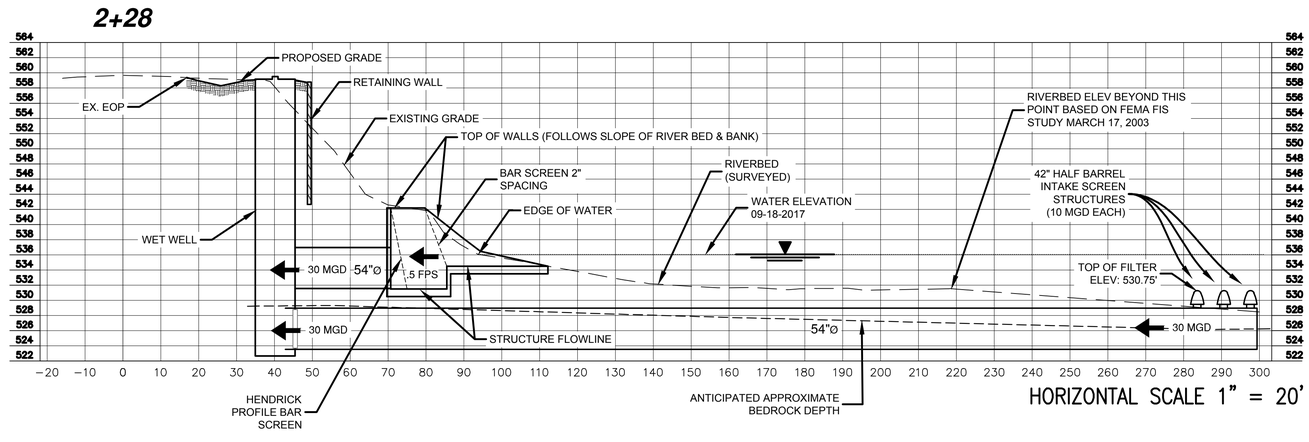
Fractional	Under 60”	± 1/8”
	60” through 120”	± 3/16”
	Over 120”	± 1/4”
Decimal	2 places	± .050”
	3 places	± .010”
Diameter & Roundness	When measured in 4 places, Diameters shall be equal within:	
	24” and under	± 1/8”
	Over 24” through 48”	± 1/4”
	Over 48”	± 3/8”
Flatness	Cylinder ends shall be cut square within 1/8”	

SLOT TOLERANCES
(Resistance Welded, Profile Bar & Looped Wire)

.030” and under	± .003”
.031” and greater	± 10% of slot opening

Unless otherwise specified:
- 90% of inspected slots 0.100” or less must be within tolerance
- 100% of inspected slots greater than 0.100” must be within tolerance

HSC standard tolerances apply unless otherwise stated on the Work Order or Drawing



**NOTE: HIGH LEVEL INTAKE STRUCTURE "TOP OF WALLS" SHALL BE RECESSED 1" +/- FROM EXISTING RIVER BED AND BANK AT ALL POINTS AND SHALL NOT OBSTRUCT FLOW IN ANY WAY.

PROPOSED CROSS SECTION STA 2+28 H/V : 1/2

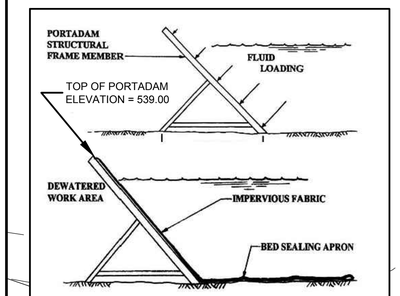
GODLEY PUBLIC WATER DISTRICT
PRELIMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN AND TREATMENT PLANT DESIGN SCHEMATIC

WITHDRAWAL DETAILS 2/2

SHEET NO. 3 OF 7

JOB NO. M12-034

X:\Projects\M-Jobs\M12-GODLEY\M12-034 Kankakee River Water Withdraw\DWG\8-Site\C2-C5 - Sketch Plan.dwg, 2/11/2019 3:08:11 PM, jmgingerich



TYPICAL PORTADAM CONCEPTUAL DETAIL
N.T.S.

KANKAKEE RIVER

REGULATORY FLOODWAY AS SCALED FROM FIRM MAP #17197C0580E

ZONE AE SEHA AS SCALED FROM FIRM MAP #17197C0580E

APPROXIMATE EDGE OF WATER 9-18-2017

HIGH LEVEL WITHDRAWAL PCC CONCRETE STRUCTURE TOTAL CAPACITY = 30 MGD (SEE SHEET #3 FOR PROFILE VIEW)

PORTADAM STRUCTURAL FRAME LIMITS

PROPOSED PORTADAM

LOW LEVEL WITHDRAWAL STRUCTURES TOTAL CAPACITY = 30 MGD (3 x 10 MGD EACH)

42" HALF BARREL SCREEN

TOP OF PORTADAM ELEVATION = 539.00

LIMITS OF DEWATERED WORK AREA (SEE PORTADAM DETAIL)

PROPOSED PORTADAM

GRAPHIC SCALE
10 0 5 10
(IN FEET)
1 inch = 10 ft.

FL534.50

TW534.50 "MEET EX. RIVER BED"

TW534.50 "MEET EX. RIVER BED"

FL534.50 "MATCH EX. RIVER BANK"

TW537.20 "MATCH EX. RIVER BANK"

TW538.30 "MATCH EX. RIVER BANK"

FL531.50

TW542.20 "MATCH EX. RIVER BANK"

TW542.20 "MATCH EX. RIVER BANK"

TW542.20 "MATCH EX. RIVER BANK"

FL531.50

TW542.20 "MATCH EX. RIVER BANK"

WETWELL STRUCTURE

VALVE VAULT STRUCTURE #1

TW558.80

TW558.90

VALVE VAULT STRUCTURE #2

TW558.80

TW558.90

RETAINING WALL

STUDIED JURISDICTIONAL WETLAND LIMITS (SUBJECT TO ACOE CONCURRENCE)

EXISTING RIGHT-OF-WAY

ROUTE 113

2+28.09

3+00

2+00

50.2'

5.8'

146.6'

33.0'

45.0'

54'-0"

54'-0"

50.00'

N0°35'54"W

70.1'

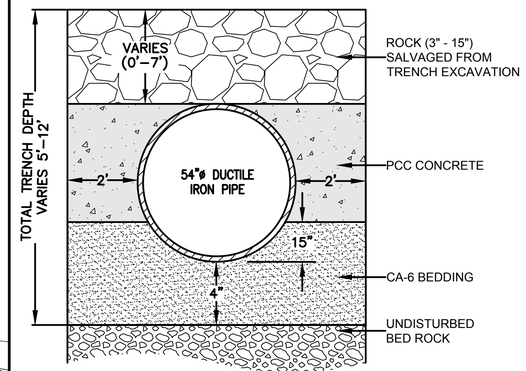
43.6'

15.9'

7'

9'

30'



PIPE INSTALLATION DETAIL BELOW RIVER BED
N.T.S.
(**SEE SHEET #3 FOR PIPE PROFILE VIEW**)

PLAN EDITION MILESTONES		
DATE	BY	DESCRIPTION
10/4/2017	JMG	Submittal to IDNR/ACOE/FEPA
12/29/2017	JMG	Changes Per ACOE/IDNR Comments
02/01/2018	JMG	Submittal to WB, S. Dock, Spill & Water

M. GINGERICH, GEREAUX & ASSOCIATES | BRADLEY OFFICE
ENGINEERING * PLANNING * SURVEYING
Bradley Office
240 N. Industrial Drive
Bradley, Illinois 60915
PH. 815-939-9810
FX. 815-939-9810
Manhattan Office
25820 S. Gougar Rd
Manhattan, Illinois 60442
PH. 815-478-9680
FX. 815-478-9685
www.mge2a.com

DESIGN: MAG
DRAWING: JMG/CAC
CHECKED: MAG
APPROVED: –

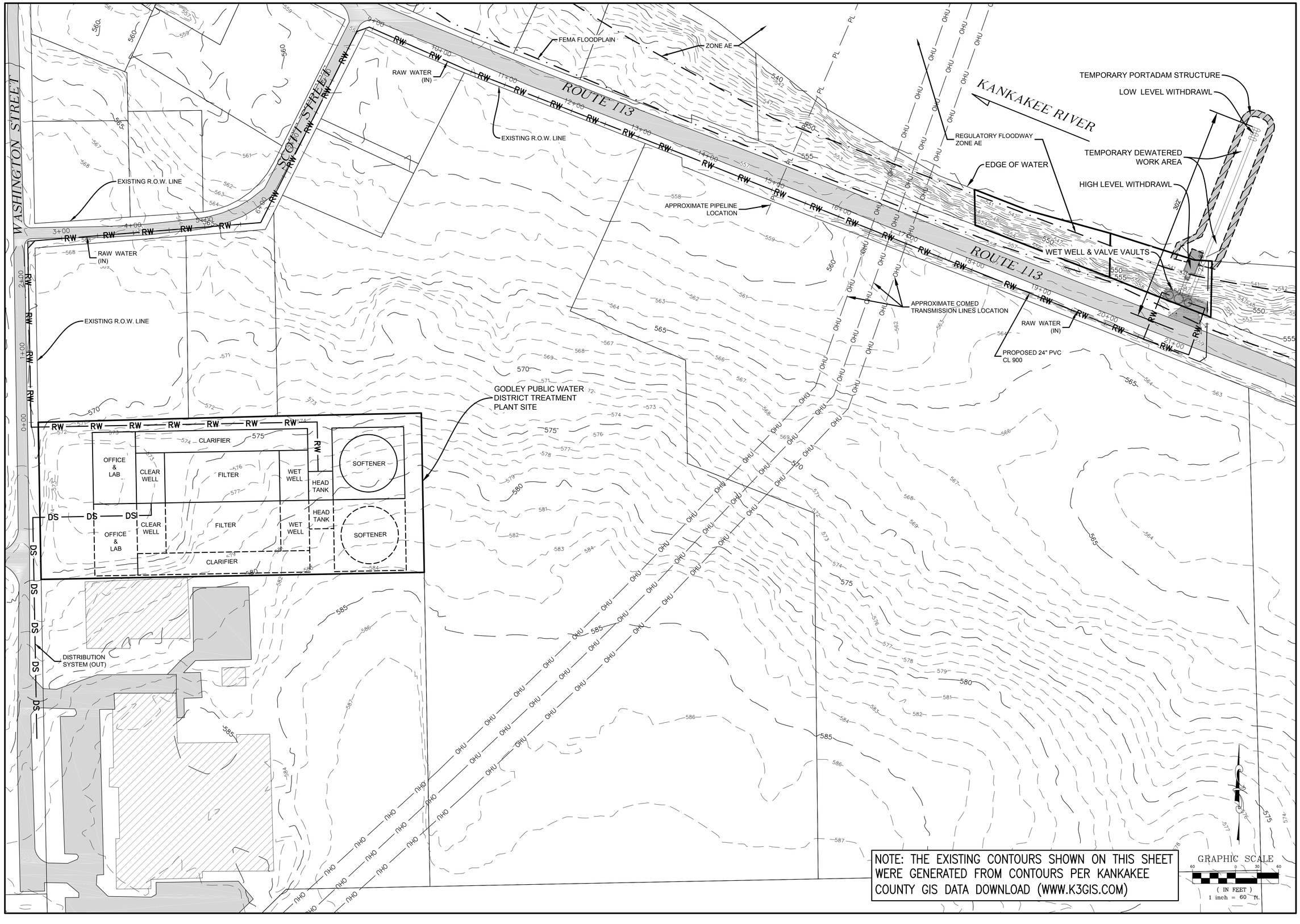
PROFESSIONAL DESIGN FIRM #184.001808

GODLEY PUBLIC WATER DISTRICT
PRELIMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN AND TREATMENT PLANT DESIGN SCHEMATIC

WITHDRAWAL SITE PLAN

SHEET NO. 4 OF 7

JOB NO. M12-034



PLAN EDITION MILESTONES			
DATE	BY	DESCRIPTION	
10/14/2017	JMG	Submittal to IDNR/ACOE/EPA	
12/29/2017	JMG	Changes Per ACOE/IDNR Comments	
02/01/2018	JMG	Submittal to Will S. Cook Soil & Water	

M. GINGERICH, GEREAUX & ASSOCIATES
ENGINEERING * PLANNING * SURVEYING
BRADLEY OFFICE
Bradley Office
240 N. Industrial Drive
Bradley, Illinois 60915
PH: 815-939-9810
FX: 815-939-9810
Manhattan Office
25620 S. Gougar Rd
Manhattan, Illinois 60442
PH: 815-478-9680
FX: 815-478-9685
www.mg2a.com

DESIGN: MAG
DRAWING: JMG/CAG
CHECKED: MAG
APPROVED: _

PROFESSIONAL DESIGN FIRM #184.001808

GODLEY PUBLIC WATER DISTRICT

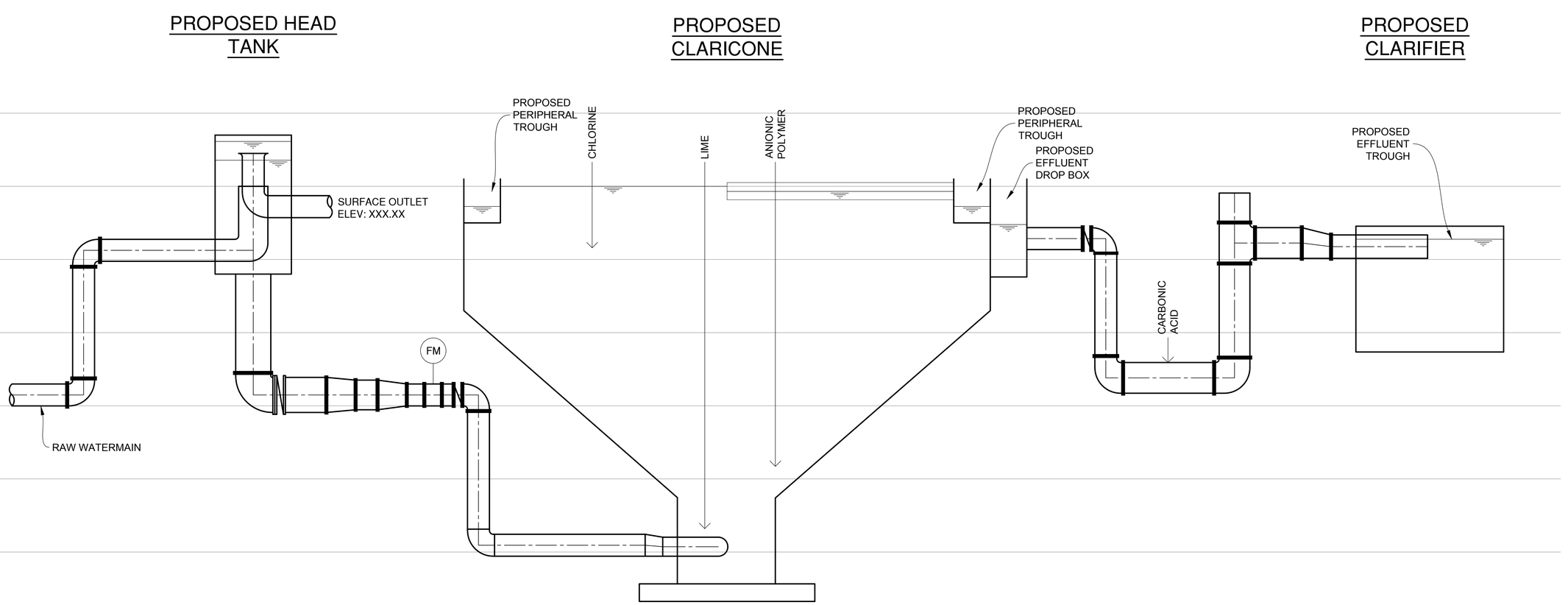
PRELIMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN AND TREATMENT PLANT DESIGN SCHEMATIC

PRELIMINARY OVERALL SITE PLAN

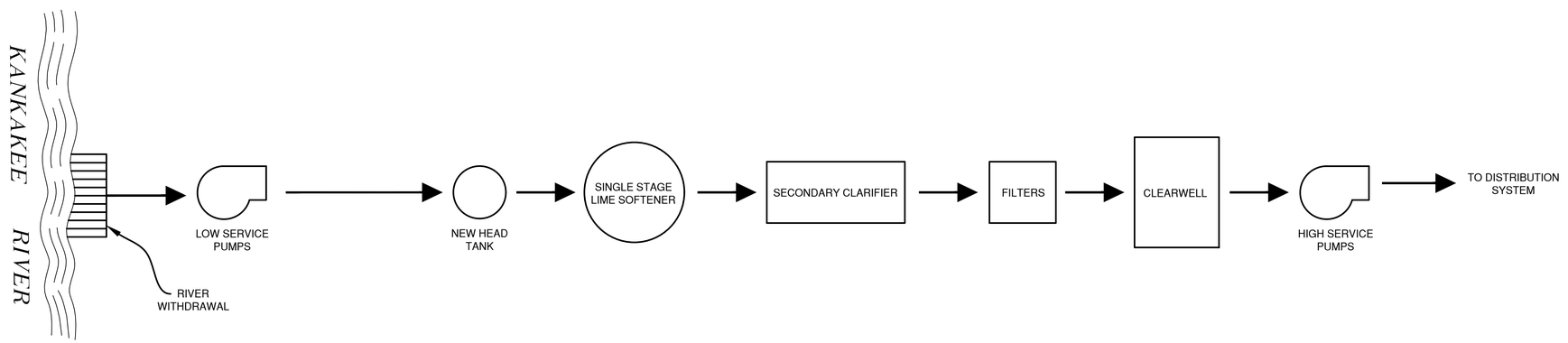
SHEET NO. 5 OF 7

JOB NO. M12-034

X:\Projects\M-Jobs\M12-GODLEY\M12-034 Kankakee River Water Withdraw\DWG\8-Site\C2-C5 - Sketch Plan.dwg, 2/1/2018 11:23:24 AM, jmgingerich



PRELIMINARY CLARICONE HYDRAULIC PROFILE (N.T.S.)



PRELIMINARY PROCESS FLOW DIAGRAM

PLAN EDITION MILESTONES

DATE	BY	DESCRIPTION
10/4/2017	JMG	Submitted to IDNR/ACOE/FEPA
12/29/2017	JMG	Changes Per ACOE/IDNR Comments
02/01/2018	JMG	Submittal to WID S. Cook Soil & Water

M. GINGERICH, GEREAUX & ASSOCIATES
ENGINEERING * PLANNING * SURVEYING
BRADLEY OFFICE
Bradley Office
240 N. Industrial Drive
Bradley, Illinois 60915
PH: 815-939-4420
FX: 815-939-9810
MANHATTAN OFFICE
Manhattan Office
25620 S. Gougar Rd
Manhattan, Illinois 60442
PH: 815-478-9680
FX: 815-478-9685
www.mg2a.com

DESIGN: MAG
DRAWING: JMG/CAG
CHECKED: MAG
APPROVED: –

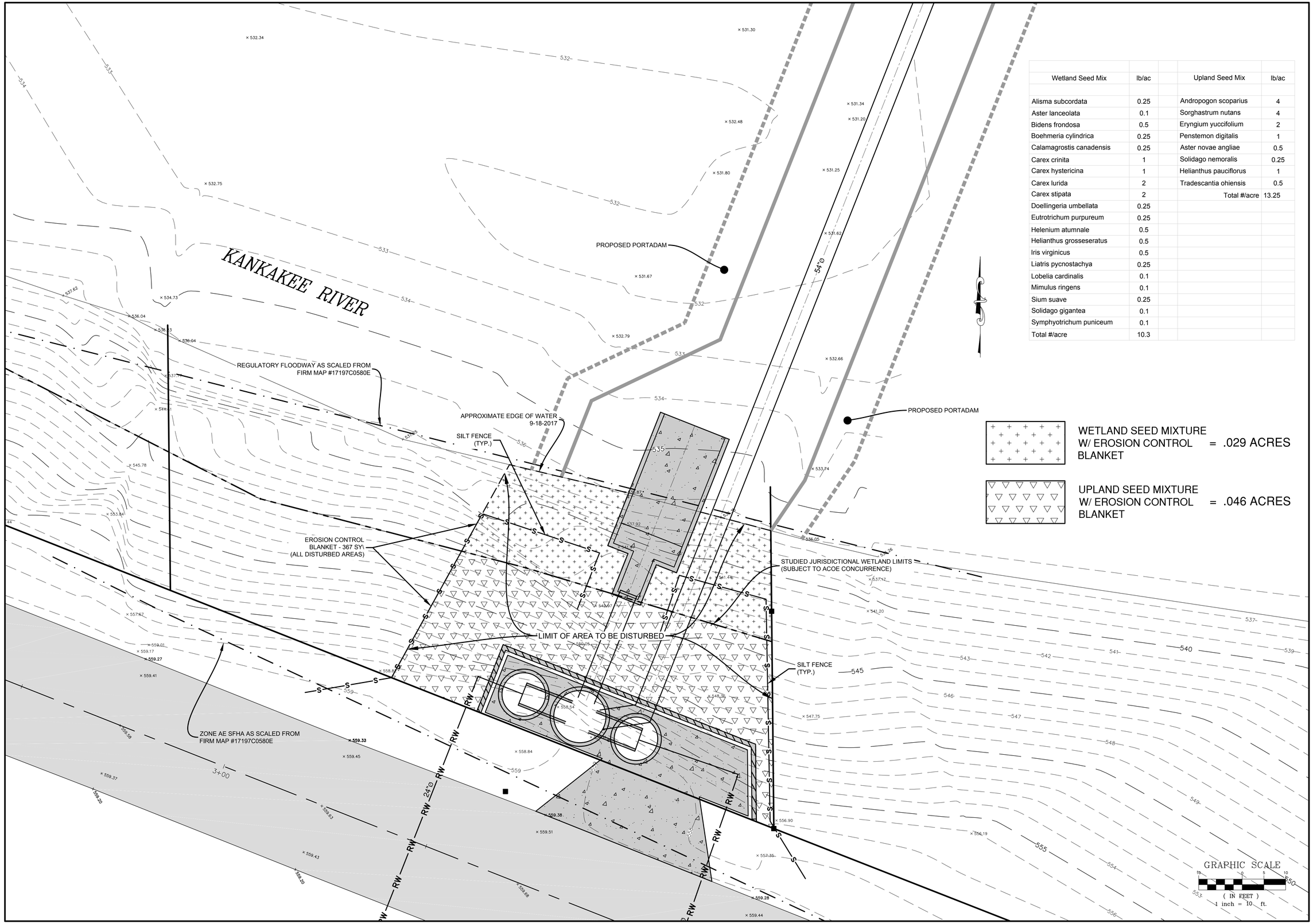
PROFESSIONAL DESIGN FIRM #184.001808

GODLEY PUBLIC WATER DISTRICT
PRELIMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN AND TREATMENT PLANT DESIGN SCHEMATIC

PRELIMINARY TREATMENT PLANT HYDRAULIC PROFILE & FLOW DIAGRAM

SHEET NO. 6 OF 7

JOB NO. M12-034



Wetland Seed Mix	lb/ac	Upland Seed Mix	lb/ac
Alisma subcordata	0.25	Andropogon scoparius	4
Aster lanceolata	0.1	Sorghastrum nutans	4
Bidens frondosa	0.5	Eryngium yuccifolium	2
Boehmeria cylindrica	0.25	Penstemon digitalis	1
Calamagrostis canadensis	0.25	Aster novae angliae	0.5
Carex crinita	1	Solidago nemoralis	0.25
Carex hystericina	1	Helianthus pauciflorus	1
Carex lurida	2	Tradescantia ohiensis	0.5
Carex stipata	2	Total #/acre	13.25
Doellingeria umbellata	0.25		
Eutrotrichum purpureum	0.25		
Helenium atumnale	0.5		
Helianthus grosseseratus	0.5		
Iris virginicus	0.5		
Liatris pycnostachya	0.25		
Lobelia cardinalis	0.1		
Mimulus ringens	0.1		
Sium suave	0.25		
Solidago gigantea	0.1		
Symphyotrichum puniceum	0.1		
Total #/acre	10.3		

WETLAND SEED MIXTURE W/ EROSION CONTROL BLANKET = .029 ACRES

UPLAND SEED MIXTURE W/ EROSION CONTROL BLANKET = .046 ACRES

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

PLAN EDITION MILESTONES

DATE	BY	DESCRIPTION
10/4/2017	JMG	Submitted to IDNR/ACOE/FEPA
12/29/2017	JMG	Changes Per ACOE/IDNR Comments
02/01/2018	JMG	Submittal to WRS S. Cook Soil & Water

M. GINGERICH, GEREAUX & ASSOCIATES
ENGINEERING * PLANNING * SURVEYING
BRADLEY OFFICE
Bradley Office
240 N. Industrial Drive
Bradley, Illinois 60915
PH: 815-939-4822
FX: 815-939-9810
Manhattan Office
25620 S. Gougar Rd
Manhattan, Illinois 60442
PH: 815-478-9680
FX: 815-478-9685
www.mga.com

DESIGN: MAG
DRAWING: JMG/CAG
CHECKED: MAG
APPROVED: –

PROFESSIONAL DESIGN FIRM #184.001808

GODLEY PUBLIC WATER DISTRICT

PRELMINARY KANKAKEE RIVER WATER WITHDRAWAL PLAN AND TREATMENT PLANT DESIGN SCHEMATIC

SWPP PLAN - MITIGATION PLAN

SHEET NO. 7 OF 7

JOB NO. M12-034

X:\Projects\M-Jobs\M12-GODLEY\M12-034 Kankakee River Water Withdraw\DWG\8-Site\C2-C5 - Sketch Plan.dwg, 2/1/2018 11:23:35 AM, jmgingerich

Attachment 3

Mussel Salvage Plan

Hey and Associates, Inc.

MUSSEL SALVAGE PLAN

Godley Public Water District

Kankakee River Water Withdrawal

Custer Park, Will County, Illinois

PREPARE FOR:
Godley Public Water District
P.O. Box 130, 440 South Center Street
Godley, Illinois 60407

PREPARED BY:
Hey and Associates, Inc.
26575 W Commerce Drive, Suite 601
Volo, IL 60073

December 20, 2019
Revised February 19, 2020

Mussels will be relocated from the water intake construction area in the Kankakee River where all in-stream work will occur. The mussel relocation will follow the methods and conditions set forth in this Mussel Salvage Plan and in accordance with all incidental take authorizations from the U.S. Fish and Wildlife Service (USFWS) and Illinois Department of Natural Resources (IDNR).

RELOCATION SITE

The relocation site will be upstream of the intake construction area to avoid any possible siltation/sedimentation into the area with the salvaged mussels. This area is situated adjacent to the Evans-Judge Preserve owned by the Forest Preserve District of Will County. This will provide an access point to the river, and an area where the riparian vegetation on the south bank will remain in a natural condition. The river bottom of the mussel relocation site will be composed of sands, gravel, and cobble over bedrock, consistent with the prime mussel habitat in the Kankakee River. This location is approximately 3000 to 6000 feet upstream of the intake site. Surveys and translocation activities will be conducted during normal low flow conditions whenever possible.

Detailed surveys of the site will be performed 30-90 days prior to the proposed relocation and specific areas within this approximate 30-acres of river habitat will be identified as most suitable or prime habitat. A characterization of the river bed, the existing mussel community, river flow conditions, and water quality will be provided to the IDNR and USFWS at that time. However, given the location within 3000-6000 feet immediately upstream and observations from the riverbank, it is anticipated that the conditions will be very similar to the intake location. Upon the approval of the IDNR and USFWS of the specific area within this site as the salvage recipient location, this area will be marked in the field to prepare for the mussel salvage operation.

Immediately prior to the mussel relocation, a qualified malacologist will assess the micro-habitat within the relocation area and a subset of this area will be selected and a re-population grid established based on the observed microhabitat conditions.

In the unlikely event that suitable relocation habitat is not found within the 30 acres of riverbed along Evans-Judge Preserve, an alternative location will be sought through collaboration with a qualified malacologist familiar with the mussel bed habitat within the Kankakee River. This alternate location would then be subject to the same characterization as described above for the preferred site.

QUALIFICATIONS

Habitat assessments and all handling of mussels will be done by qualified malacologists or technicians under their direction that are familiar with native freshwater mussels, their identification and habitat requirements in the Midwest. Given the flow and depth of the Kankakee River, it is likely most work will be done by snorkeling or scuba diving. All scuba divers will be certified (Professional Association of Diving Instructor-PADI) and follow industry accepted safety standards. The qualified malacologists will hold valid permits from both the USFWS and IDNR for handling listed species.

Mussel salvage personnel shall survey the action area (intake location) via diving, wading, and/or snorkeling, as appropriate. All live mussels observed shall be collected by hand and removed.

SALVAGE PROTOCOLS

The location of the water intake construction and mussel salvage area will be accurately located in the river and marked with anchored buoys in the river and survey flags on the riverbank to ensure the salvage team completes the salvage across the entire planned work area in the river.

The salvage area will then be divided into a grid and searched using adaptive sampling. In this way, the most effort is allocated to the areas with the highest mussel density. This method has been used in other mussel relocations with a reported >90% salvage efficiency (USFWS 9/26/2019 comment letter). Each grid cell will be approximately $5m^2$ ($54ft^2$) square and be surveyed for 15-minutes for the first search pass. Any cells with at least one mussel in the first pass will receive a 2nd pass search effort. Grid cells with 2nd passes where the mussel search total exceeds 10% of the first pass will be subject to a 3rd pass. Additional passes will be completed until the re-survey condition is not met or until no listed species are found.

All collection and relocation of mussels will be done at normal or low flow and only when the water temperature is above 59 degrees Fahrenheit and water clarity is good (at least 0.5m at depth of survey).

All mussels will be identified to species, counted, and if possible, sexed, processing all listed species immediately upon discovery. All live specimens of listed species will be measured. Federal and state listed species will be affixed with a Passive Integrated Transponder (PIT) tag to allow for future monitoring efforts.

While awaiting identification and relocation, mussels will be held temporarily in submerged mesh bags or containers filled with clean river water that ensure appropriate and consistent water temperature and oxygen levels. A portable aerator may be used to maintain oxygen levels. During boat or vehicle transfer to the relocation site, listed species will be held out of the water no more than 5 minutes and in shaded conditions.

Listed species collected during the mussel salvage will be relocated to suitable habitat known to have a similar mussel community and with adjacent landowner permissions. The suitable habitat includes an area: 1) with stable sand/gravel or sand/gravel/cobble substrate below the ordinary low water elevation; 2) with similar mussel species diversity, 3) not currently subject to mixing zones associated with point-source discharges, immediately downstream of tributaries, or subject to evident sources of non-point source pollution. Non-listed mussels will also be translocated in such a manner as to increase their chances for survival.

Listed mussel species will be hand-placed securely in the substrate by a professional malacologist or another qualified individual working under the direction of a malacologist. The siphons of mussels shall be exposed above the substrate/water interface. This will avoid dislodging of the mussels during high flow events. Non-listed mussels may be "broadcast" in areas of suitable, non-compacted substrate but these areas must be re-checked by a diver within 24hrs to ensure all mussels have re-buried in the life position. Any non-listed mussels found not to be buried will be hand-placed in the substrate in the life position.

Any listed mussel species accidentally killed, or that are moribund or fresh dead and contain soft tissues, will be preserved according to standard museum practices, properly identified, and indexed (date of collection, complete scientific and common name, latitude and longitude of collection site, description of collection site), and submitted to the Illinois Natural History Survey (INHS) or The

Field Museum. Disposition of these specimens will be coordinated with the INHS prior to mussel salvage. The appropriate curator (*i.e.,* Dr. Kevin Cummings at INHS) will be contacted regarding proper specimen preservation and shipping procedures. In addition, the USFWS and IDNR will be notified within 24 hours of this take.

Once the initial mussel salvage has been implemented, the coffer dams installed, and dewatering completed, then excavation as needed to install the intake infrastructure will begin within the dry work area. Any excavated material will be temporarily stockpiled onsite, and if any buried mussels are observed or discovered during the excavation, they individuals will also be relocated as described above and noted in the totals reported.

Notification will be made to the following USFWS office at least two days prior to beginning in-stream translocation activities:

Chicago Illinois Ecological Services Field Office
230 South Dearborn St., Suite 2938
Chicago, Illinois 60604
Phone:847-366-2345
Attention: Mr. Shawn Cirton

A report documenting the translocation effort will be prepared and submitted to the USFWS and the IDNR within 45 days of completion of the translocation. A preliminary electronic draft summary (email) including number of listed species encountered will be submitted within 5 working days following the completion of fieldwork. The final report will include an introduction, GIS mapping, methods section, results section, conclusion and/or summary, and any relevant supplementary information (*e.g.,* names and qualification of surveyors). The methods section will detail the protocols used for surveying, holding, handling, and translocating mussels; and establishment and location of the relocation site. The results section will include; the total number of individuals of each mussel species collected and relocated; date collected; water and air temperatures; river status; total number of live and dead listed species collected; condition, size, and approximate age of live listed species; similar data regarding non-endangered mussels excluding age and exact size; and GIS maps or figures showing 1) project features and action area; and 2) the relocation site(s). Electronic files including GIS data (shapefiles or database with XY coordinates) of species locations will be provided to the USFWS and IDNR.

Attachment 4

Public Notice Information

PUBLIC NOTICE

Local Newspaper as required:
Notice to appear once a week for 3 consecutive weeks, minimum 14 days between first and last publication. 10/5/2020; 10/12/2020; 10/20/2020

Braidwood Journal
111 S. Water Street
Wilmington, IL 60481
(815) 476-7966

State Newspaper as Required:

Published once, coinciding with first publication date in the local newspaper:
In most cases, copy must be received by mail three (3) days before the first insertion date.

State Newspaper Contact Information:

Marylee Razar
Breeze Printing Co.
P.O. Box 440
212 South Main Street
Taylorville, IL 62568,

Subscriptions: 217-824-2233
E-mail Subscriptions
Legal Notices Department Telefax: 217-824-2026
E-mail Legal Notices Department

Hard Copies to nearest Public Library as Required:
Fossil Ridge Public Library
386 W. Kennedy Road
Braidwood, IL 60408

Must also be sent to:
Executive Director
Illinois Endangered Species Protection Board
One Natural Resources Way
Springfield, IL 62702-1271

NOTICE

Notice is hereby given seeking public comment on an application by the Godley Public Water District for an Incidental Take Authorization for possible impacts to the federally and state-endangered sheepnose mussel (*Plethobassus cyphyus*), and the state threatened purple wartyback mussel (*Cyclonaias tuberculata*), and the spike mussel (*Elliptio dilatata*). In addition, it addresses the state-listed pallid shiner (*Hybopsis amnis*), river redhorse (*Moxostoma carinatum*), western sand darter (*Ammocrypta clarum*), weed shiner (*Notropis texanus*), and the mudpuppy (*Necturus maculosus*) in the Kankakee River at Custer Park in Will County. Please note that the Conservation Plan was written to include the black sandshell mussel (*Ligumia recta*) which has since been delisted by the State of Illinois.

Applicant Contact Information:
Godley Public Water District
P.O. Box 130
Godley, Illinois 60407
Joe Cosgrove, General Manager

The applicant has filed a Conservation Plan in accordance with Illinois Administrative Code, Chapter I, Section 1080 which is available for review at the following public library:

Fossil Ridge Public Library
386 W. Kennedy Road
Braidwood, IL 60408

The Conservation Plan will also be available for review on the Illinois Department of Natural Resource's webpage at:
https://www.dnr.illinois.gov/conservation/NaturalHeritage/Pages/Incidental-Take-Authorizations.aspx (reference #199).

Description of Proposed Action
The Godley Public Water District (GPWD) has proposed the construction of water withdrawal infrastructure on the bank of and within the channel of the Kankakee River to withdraw up to 30 million gallons of water per day subject to the conditions in permit NE2019007 granted by the Illinois Department of Natural Resources (IDNR) Office of Water Resources (OWR). The project is located on the Kankakee River approximately 4.5 miles upstream from the dam at Wilmington, Illinois. The proposed intake would be approximately 262 feet from the left descending riverbank. The riverbank at this location is owned by the GPWD and is within Custer Park, Illinois.

EnviroScience, Inc. conducted a survey for freshwater mussels and fish within the project area in August and September 2018 on behalf of the GPWD. Their report documented a total of 4,938 living mussels with 24 species detected. Fresh dead and weathered dead shells contributed two additional species. The state-threatened purple wartyback and formerly state-listed black sandshell were detected throughout the survey area. Fourteen live sheepnose were found scattered in the survey area, a species that is both state and federally listed. A single state-threatened spike was collected near the right descending bank. In addition, this reach of the Kankakee River has records for or provides suitable habitat for the state-listed pallid shiner, river redhorse, western sand darter, weed shiner, and the mudpuppy. Other federally listed species known from Will County are addressed briefly in a revised Biological Assessment prepared and submitted to the U.S. Fish and

Wildlife Service and U.S. Army Corps of Engineers. A Biological Opinion addressing federally listed species and provided federal take authorization has been received for the project.

This water withdrawal infrastructure in the Kankakee River will be constructed within a 0.264-acre coffer dammed work area (in the dry). Most of the facilities will be constructed at or below the existing riverbed elevation. The only infrastructure above the existing ground elevation will be the three 42-inch diameter half-barrel screen intakes. The top of these intakes will be 27-inches above the riverbed. The intakes will be placed parallel to the channel flow, have a cross-section of 8 square feet each and up to 12 feet in length. It is anticipated that this work may cause potential impacts to listed species in the stream within and around the 0.264-acre work area. A Mussel Salvage Plan will be implemented to remove all mussels from the work area and translocate them to suitable habitat upstream of the work area within the Kankakee River. In addition, all fish and amphibians will also be captured and relocated to suitable habitat downstream of the coffer dammed work area. GPWD will be responsible for a 10-year monitoring program to document the effectiveness of this relocation work.

As mitigation for potential impacts to the purple wartyback, spike, sheepnose mussels, pallid shiner, river redhorse, western sand darter, weed shiner, and mudpuppy a contribution of $30,000 to the mussel research program at Ohio State University will be made for the conservation benefit of the sheepnose and other listed mussel species. There is a desire that this work would specifically address impacts from water withdrawals to listed species such as the sheepnose, though it is not known if any such studies are available or ongoing. Additional conservation measures are described more fully in the Conservation Plan.

Comments on this Conservation Plan and proposed Incidental Take Authorization should be provided to:

Illinois Department of Natural Resources
Office of Resource Conservation
Incidental Take Authorization Coordinator
One Natural Resources Way
Springfield, IL, 62702
OR
DNR.ITAcoordinator@illinois.gov.

The final date that comments will be accepted regarding this application will be November 20, 2020.

Attachment 5

Project Area Photographs

Photograph 1:

View downstream from proposed intake location on the Kankakee River.

Photograph 2:

View from south riverbank at intake location on Kankakee River.

Photograph 3:

View across river from Evans Judge Preserve at relocation site on Kankakee River.

Photograph 4:

View of cobble along riverbank at relocation site on Kankakee River.

Photograph 5:

View of riverbank where intake infrastructure is proposed.

Photograph 6:

View of proposed raw water pipe route along Route 113.

Photograph 7:

View of proposed raw water pipe route along Garfield Street.

Photograph 8:

View of lot proposed for water treatment plan.