

**MINUTES OF THE KANKAKEE RIVER BASIN AND YELLOW RIVER
BASIN DEVELOPMENT COMMISSION
HELD FRIDAY, MAY 14, 2021
2:30 p.m. CST/3:30 p.m. EST**

CONDUCTED ELECTRONICALLY UNDER EXECUTIVE ORDER 20-09

John McNamara, Chair, called the meeting to order at 2:30 p.m. CST.

Scott Pelath, Executive Director, explained the electronic meeting procedures.

Mike Novotney, Secretary, called the roll.

Members Present at Roll Call

Rob Churchill (arrived 2:37 PM)	John Coulter, Sr. (arrived 2:34 PM)	
Craig Cultice	Bill Emerson	John McNamara
Ryan Mueller	Mike Novotney	James Walstra
John Shure (IL)	Andrew Wheeler (IL) (arrived 2:42 PM)	

Staff Present

Scott Pelath

Mr. Novotney stated the presence of a quorum.

Approval of minutes from March 4, 2021, meeting

Bill Emerson moved that the minutes be adopted. Craig Cultice seconded the motion.

MOTION ADOPTED BY VOICE VOTE.

Finance Report

Mr. Pelath presented the financial report and a list of claims that either were paid or needed to be paid since the previous meeting [contained in the Executive Director's Report ATTACHMENT 1].

Ryan Mueller moved that the Commission accept the finance report. John Coulter seconded the motion.

MOTION ADOPTED BY VOICE VOTE.

OLD BUSINESS

Jasper County FEMA Project

Mr. Pelath reported that it may be necessary to return all of Jasper County's assessments to them this year. Jasper County has a project completion deadline from the Federal Emergency Management Agency (FEMA), and it is important that the county has the cash flow necessary to complete the project and qualify for full reimbursement. Mr. Pelath said that, additionally, a commitment from the Commission is necessary to assist Jasper County with its bank financing, and asked for permission from the Commission to reduce that commitment to writing.

Mr. Pelath said providing the county with additional funds during this period would retire the Commission's commitment under its Memorandum of Understanding with Jasper County sooner.

Jim Walstra affirmed that the project must be completed by April 2022. Bids for further work are slated to be opened in June. He said the financial burden on the county is heavy until FEMA makes the full reimbursement following project completion.

Jim Walstra moved that if necessary to ensure adequate cashflow for Jasper County, the Commission pledge to return its full assessment to Jasper County until the FEMA project is completed. Mr. Emerson seconded the motion.

MOTION ADOPTED BY VOICE VOTE.

Report on Yellow River project design and permitting

Mr. Pelath reported that some permits already have been issued, and the project timetable for the Marshall County section remains on track. He said the intent was to bid the Marshall County and Starke County sections separately.

Ross St. Clair from Cardno reported that the design and permitting timelines are all being met. He said the Marshall County section may be completed this year, and he has submitted separate cost estimates for both counties' sections. He added that he is excited for the final stage of the design.

Logjam Management Activities

Mr. Pelath said that Allsop has concluded seasonal work between LaPorte and Starke, and that Mark Wittmer addressed nearly two miles of bank in Newton County. Mr. Pelath also reported on the removal of a large tree from State Line Bridge.

For the Yellow River, Mr. Pelath said the intention is to begin cutting-up major logjams in areas without viable access. He presented a diagram of the technique, which is already being employed in Michigan and Wisconsin. [ATTACHMENT 2]. He also presented a photo of an example of a severe logjam in Marshall County.

Craig Cultice also reported that Lee Wiltjer would be onsite with his amphibious excavator in the near future.

Riverbank seeding

Mr. Pelath reported that approximately a half-mile of the Jasper County FEMA project has been hydroseeded with native grasses in two separate sections. The goal is to further stabilize the armor, prevent detrimental species of vegetation, and improve aesthetics. He said it may take a year to fully evaluate the results.

Grand Kankakee Marsh County Park Bank Reconstruction

Mr. Pelath refamiliarized the Commission with the bank reconstruction to take place at Grand Kankakee Marsh County Park. The work was expected to commence in June.

Mr. Emerson added that the floodwater storage opportunities are intended to improve as a result of the project.

Other project updates

Mr. Pelath mentioned that the Porter County bank access expansion has started. He also said he had been working with Newton County Surveyor Steve Snell on Sumava Resorts repairs.

Mr. Pelath discussed upstream sediment traps. While he emphasized that the authorization and funding of specific trap maintenance was a Commission decision, Mr. Pelath hoped to have them permitted as a group to reduce the possible need for redundant permit applications.

Mr. Novotney reported that he was pleased with the results of the access expansion. He also said the temporary dock was in place for the log jam and mass wood removal pilot project, with the work expected to begin soon.

Mr. Novotney also expressed enthusiasm that once completed, the Bridge 62 project in Porter County should catch substantially less river-born debris in the future.

NEW BUSINESS

Tolthawk river gage pilot for tributaries

Mr. Pelath presented the Tolthawk private river gage technology, which he believes might supplement USGS data, specifically with respect to the behavior of the tributaries during flood events. The Technical Advisory Committee had already enjoyed a presentation on the technology, which was well-received by members. He added that the upfront and annual costs of the gages are modest.

Mr. Pelath said the Commission has the opportunity to test one for no-cost for a period of time. The data from the gage feeds into a database that can be used for modeling and analysis.

The chair directed that the free test-period offer be accepted.

Bremen/SR106 - Yellow River Bank Stabilization /Kayak Launch

Mr. Pelath presented Technical Advisory Committee Recommendation 2-2021 [ATTACHMENT 3].

Mr. Emerson moved that the Commission adopt TAC Recommendation 2-2021. Mr. Cultice seconded the motion.

MOTION ADOPTED BY VOICE VOTE.

Yellow River, Phase II project location

Mr. Pelath presented a possible location of the next phase of the Yellow River bank reconstruction. He cautioned that it was possible that cash considerations were likely to affect the pace of the phase implementation.

Floodplain reconnection/floodwater storage prioritization

Mr. Pelath presented Technical Advisory Committee Recommendation 1-2021 [ATTACHMENT 4].

Mr. Walstra moved that the Commission adopt TAC Recommendation 1-2021. Mr. Emerson seconded the motion.

MOTION ADOPTED BY VOICE VOTE.

Regional Conservation Partnership Program opportunities

Mr. Pelath provided a brief update. There was no substantial new news.

Duck nesting boxes

Mr. Pelath presented Technical Advisory Committee Recommendation 4-2021, but asked that it be withheld from consideration until duck nesting box maintenance partner can be recruited.

OTHER BUSINESS

Mr. Pelath reminded the Commission that the officer terms come to an end on June 30, and that the initial, two-year terms of Marshall, LaPorte, Starke, and Porter Counties end on the same date.

Mr. Pelath reported that the Commission was granted membership on the Indiana Wetlands Task Force, and noted that Mike Novotney expressed his willingness to serve on the task force.

Mr. Mueller moved that the Commission recommend Mike Novotney to the Governor's office for membership on the task force. Rob Churchill seconded the motion.

MOTION ADOPTED BY VOICE VOTE.

Mr. Pelath asked that he be allowed to extend the Commission's Memorandum of Understanding with the Attorney General's office for legal services.

Mr. Novotney moved that Mr. Pelath be empowered to extend the agreement with the Attorney General's office. Mr. Mueller seconded the motion.

MOTION ADOPTED BY VOICE VOTE.

EXECUTIVE DIRECTOR'S REPORT

A written report [ATTACHMENT 1] was distributed prior to the meeting.

PUBLIC COMMENT

Bob Strickler spoke about his experiences with water management.

NEXT MEETING

The next meeting date, location, and format was to be determined.

ADJOURNMENT

The meeting adjourned at 3:33 p.m. CST.

ATTACHMENT 1

EXECUTIVE DIRECTOR'S REPORT

To: KRB-YRBDC Members
From: Scott D. Pelath, Executive Director
Date: May 11, 2021

Spring is upon us, and so is the opportunity to witness the evolution of a number of projects throughout the basin.

Finance Report

Revenue. Seven of the eight counties have made their annual administrative payments to the Commission in the total amount of \$47,300. The state also made their 4th Quarter administrative distribution, although they typically withhold our legal fees due to the Attorney General's office. The net was about \$9000.

Assessments. We have now entered the Assessment Era. Both the counties and I received a number – but not a deluge – of calls and questions from taxpayers regarding the assessment. In the majority of cases, people simply wanted to know what it was. Reporting only for myself, I didn't have a single conversation that wasn't civil, and I had set up a hotline for such calls. It also provided an opportunity to talk about our work and plans.

In writing the budget, I likely underestimated the assessment funds that will be available during this calendar year. Our chairman correctly pointed out that counties put the entire residential assessment on the April bill. I did not yet make that presumption when I drafted the budget, so the first annual distribution is likely to be larger than the second one. In the future, this will be important to remember in cash flow projections.

Overall, the implementation has gone as well as could be expected, although it is my opinion that there are some individual situations that probably merit review and consideration of possible solutions. I particularly think the assessment of undeveloped parcels in areas zoned as industrial might require some reconsideration.

State Budget. After giving initial approvals of an approximately \$28,000 administrative increase earlier in the budget process, budget writers reduced the final increase to approximately \$8,000 over current amounts. Budget crafters reportedly noted that we now have a separate source of revenue. Although I am not sure the negotiators were fully aware of how those funds are restricted, the restoration of some funding was welcome. In any case, there are a lot of moving parts involving countless provisions at budget deadline.

New Account. In anticipation of the assessment revenues, I also established a segregated account with Horizon Bank. State law requires that assessment funds are kept separate from other dollars.

Grant Application. I have submitted an application for \$50,000 from the Natural Resources Conservation Service (NRCS) to hydroseed at least ten miles of streambank. The application status still says, "Received by Agency." I do not believe you can ever expect to receive a grant, but I have not received formal word either way.

Jasper County FEMA Project. Jasper County did finally receive a payment of approximately \$350,000 as reimbursement for their work. This is a bit of relief due to cash and financing considerations. Timely completion of the work is important, and we continue to closely monitor the county's cash considerations.

Yellow River Construction Costs. Given expected revenue flow, I am cautiously optimistic that the Marshall County piece of the project could be fully funded and completed this year. At the same time, the timing to commence work on the Starke County stretch in 2022 will require some careful attention. Sufficient funds will be available during 2022, but if the July distribution is necessary to project costs, we will need to plan for that.

My hope is to bid the construction of both county sections separately. My view is that we need opportunities to develop our workforce and learn more about the expected costs of varying streambank conditions.

Recent claims. Below is the current list of claims for river work and administrative expenses requiring either advance or retroactive approval by the Commission:

Claims to be approved as of 5/10/21					
PO #	DATE	TO	DESCRIPTION	AMOUNT	CHECK #
41-21	2/12/21	Postmasters	Inv 521135	\$0.47	1569
42-21	3/7/21	Kevin Misch Exc	Inv 806380 Raise Berm ditch bank	\$5,640.00	1565
43-21	3/8/21	Christopher Burk	Services Jan 31-Feb 27,2021	\$4,335.25	1563
44-21	3/12/21	Richard Gums F	18 hours excavating work Yellow River Inv 4-2107A	\$2,250.00	1570
45-21	3/15/21	Scott Pelath	Payroll March 1-15	\$4,792.00	online
46-21	3/15/21	American Expres	Quickbooks subscription fees	228.84	online
47-21	3/16/21	IN Dept of Rev	Feb Payroll Taxes	\$386.68	online
48-21	3/16/21	INPRS	INPRS 1st March	\$143.76	online
49-21	3/30/21	Cardno	Inv 309467 Services Through 3/26/21	\$20,626.39	1562
50-21	3/31/21	Scott Pelath	Payroll March 16-31	\$4,792.00	online
51-21	4/1/2021	Ambetter	Health Insurance	\$1,832.89	online
52-21	4/1/21	M & K Excavatin	Invoice 283	\$43,000.00	1566
53-21	4/1/21	INPRS	INPRS 2ND March	\$143.76	online
54-21	4/5/21	Gustafson AG, LI	Inv 61 Porter County Bank path	\$2,668.02	1564
55-21	4/8/21	Christopher Burk	Services Feb 28-March 27, 2021	\$5,205.50	1563
56-21	4/12/21	American Expres	Dues, Quickbooks Toner, Adobe, Go to meeting	\$664.38	online
57-21	4/15/21	Scott Pelath	Payroll April 1-15	\$4,792.00	online
58-21	4/16/21	Hill Excavating	Inv 49 Seeding Kankakee Riverbank	\$3,690.00	1572
59-21	4/16/21	IN Dept of Rev	March payroll taxes	\$386.68	online
60-21	4/16/21	INPRS	INPRS 1st April	\$143.76	online
61-21	4/17/21	On-Site Computi	Website Domain Renewal Inv 1907522	\$360.00	1568
62-21	4/19/21	IRS	Payroll Taxes	\$1,101.66	online
63-21	4/27/21	Kevin Misch Exc	Stateline Bridge Tree Removal	\$4,900.00	1565
64-21	4/28/21	NIRPC	March & April 2021 Accounting Services	\$2,550.00	1567
65-21	4/28/21	Scott Pelath	Mileage Reimbursement March 1-April 26,2021	\$680.40	1571
66-21	4/30/2021	Scott Pelath	Payroll April 16-30	\$4,792.00	online
67-21	5/3/20	Hydro-Tek Seedi	Hydroseed Riverbank with slope stabilization	\$4,606.00	tbd
68-21	5/3/21	Allsop Excavatin	Removal of trees from Kankakee	\$105,900.00	tbd
				\$230,612.44	

Legislation

Thanks to State Rep. Gutwein we had a provision in HB 1395 to grant the SEA 368 process to the Commission.

As often happens, our language was contained in a bill with about two dozen other, unrelated natural resources matters. The two natural resources committee chairs apparently didn't agree about many of them, and they reached no consensus on the underlying legislation. For reasons that had nothing to do with our issue, the measure failed to pass.

Fortunately, while being added to the SEA 368 process would have been helpful, there are still administrative workarounds with the surveyors. For the time being, we'll have the regulator consultation we need.

As you probably have read, the legislature removed Class I wetlands and some Class II wetlands from state regulation. Although it was a highly debated measure, the Governor signed the legislation last week.

The bill also created a wetland task force to review wetland controversies. Prior to the enactment the Commission was added to the panel. We will get to be at the table for this discussion, which most assuredly will be a spirited one.

I presume the Commission will want to me to serve as its representative, but it does not have to be so if one of our members is interested in the challenge.

Yellow River project

Last week, IDEM issued its water quality certification for Phase I of the Yellow River bank reconstruction. That is good news. Ross St. Clair and I have also met with several Marshall County to alleviate concerns, and I am pleased with the tentative buy-in after addressing a lot of questions.

We remain on track to bid the Marshall County piece this summer and commence construction in the fall. For both cash and construction reasons, the Starke County segment is targeted to begin in the spring.

The Commission will have to make a decision regarding construction oversight. Cardno has presented a cost estimate for their services that will be integrated in the construction cost estimates.

Yellow River Basin Reconstruction – Bremen

The Marshall County SWCD recently received a Lake and River Enhancement grant to reconstruct approximately 125' of bank on the east side of the Yellow River on 106 headed into Bremen.

Several weeks ago, the DNR, Corps, IDEM, the SWCD, the City of Bremen, Craig Cultice, and I met for an on-site review.

As we all walked through the onsite considerations, it was apparent that with some design additions, the Commission could probably partner to do the west side of the section for an affordable cost under the SWCD's permit applications. The regulators were encouraging and supportive of the possibility.

It's not a long section of bank (“our” side would be about 300’), but it is badly eroding and immediately adjacent to a Bremen park and a major thoroughfare. It's an ideal demonstration opportunity that would be highly visible to the community and of value within our work plan.

The Technical Advisory Committee already recommended the project, and it will be presented for Commission consideration at our meeting.

Hydroseeding

As contained in the budget, we tested hydroseeding two sections of the Jasper County FEMA project – nearly a half-a-mile in total.

It will probably take at least a year to fully evaluate the results, but we remain hopeful that the process will jumpstart native and beneficial vegetation growth.

\$25,000 has already been budgeted for seeding, although it could potentially be augmented by federal dollars. In any case, I intend to ask the Technical Advisory Committee for seeding area priorities. They ideally will include areas recommended for bank stabilization in the work plan.

Logjam Management

For lack of an option that does not include crossing a regulated wetland, we are going to be cutting up dogged logjams on the Yellow River. This is a method already being employed in Michigan and Wisconsin, and I consulted with Bob Barr – who recommends it – and the Corps on the technique.

We still hope an amphibious excavator will remove jams when possible. However, cutting the jams in their centers to open the flow is superior to doing nothing due to costly access limitations.

State Line Bridge had a fresh blockage, and we removed it before it quickly worsened. There is a jam at one side of the Norfolk Southern bridge in Schneider for which we would benefit from the railroad's cooperation before exploring other options.

Allsop has concluded its work on the upper channel for the season. Mark Whitmer also removed problem trees from approximately 1.5 miles of bank at the LaSalle Fish and Wildlife Area.

Thayer Farm

Thanks to Ryan Mueller keeping tabs, I can report that the Division of Water engineers are almost done with their modeling for the property. The model will help Zack DeYoung determine the location and dimensions of the spill gates for the property.

The folks at LaSalle also cleared the bank access on the property. As a side benefit, we now have clear access to the railroad bridge at Thayer, which is a frequently log and ice jam recipient.

Other Floodplain Reconnection

I am working with Burke to evaluate several sites for floodplain reconnection. The Technical Advisory Committee also recommended a set of criteria for prioritizing such opportunities when they arise.

This week, the Burke team and I are reviewing the bank that protects the Wheatfield Power Plant. With the plant's planned closure, we must consider if the work plan's recommendations for that bank merit modification.

Grand Kankakee Marsh Bank Reconstruction and Stabilization

Under Bill Emerson's leadership, we had a pre-construction meeting with Austgen Excavating for the park's bank reconstruction project in Lake County. Austgen was selected through the Lake County Drainage Boards existing bid procedures.

All permits have been issued, and work is slated to begin sometime in June.

ToltHawk River Gages

The Technical Advisory Committee was impressed with the capabilities of ToltHawk river gages. They were developed under the Microsoft umbrella, and are capable of accurately reading gage heights feeding data into a computer model that improves with data collection.

They will not give us what a USGS gage can. But they would be useful on ditches, and could supplement our ability to predict flooding. Best of all they are affordable: \$1000 for the device; \$200 for an optional precipitation gage; and \$250 a year for data storage and processing. The Maumee River Basin Commission already uses them, or I may not have urged their consideration as confidently as I did.

ToltHawk will issue us one for free for six months at no risk. I suggest the Travis Ditch – which serves LaPorte, the largest municipality entirely within the basin – might be a place to start. I think a more robust test would also be worth considering.

The Technical Advisory meeting ran long because of the presentation. Members could quickly grasp the gages' potential as a supplement to the broader USGS data collection.

Sediment Trap Maintenance

There are six previously permitted sediment traps on the Kankakee River, and thirteen on the Yellow River. The maintenance of any specific trap is an individual budgetary and hydrological decision.

Some may no longer be viable at all due to changing access conditions. Furthermore, while their maintenance is currently covered by a Corps' Regional General Permit, the long-term continuance of that general permit is not a certainty.

I have discussed with regulators the possibility of reviewing them in their entirety. That way, should we decide to maintain a trap as a remedial measure, we would not have to duplicate all permitting in years ahead. The Commission then could consider the traps in context of its budget and work plan priorities.

Sumava Resorts

Our new Newton County Surveyor, Steve Snell, has an SEA 368 review for the entire bank, which demands non-emergency repairs in at least two places. I have greatly appreciated Steve's help with the permitting, and we are awaiting scheduling.

Berm at River's Edge Property Adjacent to the Deardorff Property

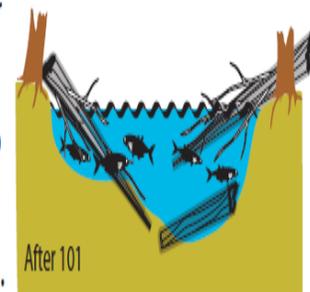
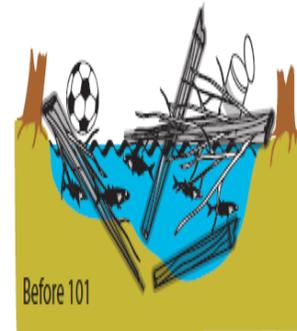
Kevin Misch repaired the lowest spot on the levy separating the River's Edge and Deardorff property for a reasonable cost. Mr. Deardorff seemed satisfied with the result.

As always, should you have any questions or suggestions, please email me at sdpelath@gmail.com or (219) 861-7999. In order to maintain focus and brevity during our electronic meeting, I welcome any issues I can resolve in advance.

ATTACHMENT 2

Clean and Open Method

1. PLAN - Address public health, legal access, safety concerns, define point of access to river, determine depth of water, flow and emergency plans.
2. CLEAN - Remove urban rubbish (man-made materials) and dispose properly.
3. OPEN - Move or cut loose, floating debris to allow a passage for flow. Use a handsaw or chain saw to make the opening wide enough to allow flow through logjam.
4. Place excess woody debris along streambanks and in the adjacent riparian corridor to create habitat.
5. Leave woody debris that is embedded in the stream's banks or bottom undisturbed.
6. Minimize impact to the riparian corridor at work site.



- Leave rooted or embedded stumps & logs.
- Remove floating or resting logs.

ATTACHMENT 3

RECOMMENDATION 2-2021

To: Kankakee River Basin and Yellow River Basin Development Commission
From: Technical Advisory Committee (TAC)
Subject: Bremen/SR 106 Yellow River Bank Stabilization
Date: March 26, 2021

DESCRIPTION: The Marshall County Soil and Water Conservation District (SWCD) has received a Lake and River Enhancement (LARE) grant to reconstruct approximately 125' of streambank on the east bank of the Yellow River adjacent to State Road 106 and Shumaker Westside Park.

The Natural Resources Conservation Service (NRCS) did the initial design of the project, which will include regrading, a rock toe, erosion control blankets, and reseeding and planting of small tree species [ATTACHMENT].

The relevant regulatory authorities have already conducted an onsite review prior to the submission of permit applications.

LOCATION: Bremen, Indiana on the Yellow River adjacent to State Road 106.

ISSUE: After direct consultation with the relevant regulatory authorities, it was evident that with a mirroring design, the Commission could reconstruct the east bank immediately across from the SWCD project. In order to ensure economies of scale in the Commission-SWCD partnership, the Commission could use the SWCD contractor and be covered under the SWCD's permits. Furthermore, NRCS could amend its design to include the west bank, of which the construction portion would be funded at Commission expense.

RECOMMENDATION: The project is entirely consistent with the Commission's work plan under Recommendation 5.1.1 ("Reduce Sediment Supply from Yellow River Upstream of Knox"). The project is cost-effective due to the SWCD partnership, potential economies of scale, and reduced duplication of effort. Finally, its visibility within the Bremen community provides the intangible benefit of demonstrating the benefits of erosion reduction on the Yellow River. The Committee recommends that the Commission grant its easement to the Marshall County SWCD, approve reconstruction of the opposite bank, and allocate any necessary funds for its completion.

ADOPTED BY COMMITTEE 3/30/2021.

ATTACHMENT 4

RECOMMENDATION 1-2021

To: Kankakee River Basin and Yellow River Basin Development Commission
From: Technical Advisory Committee (TAC)
Subject: Prioritization of Floodplain Reconnection Opportunities
Date: March 22, 2021

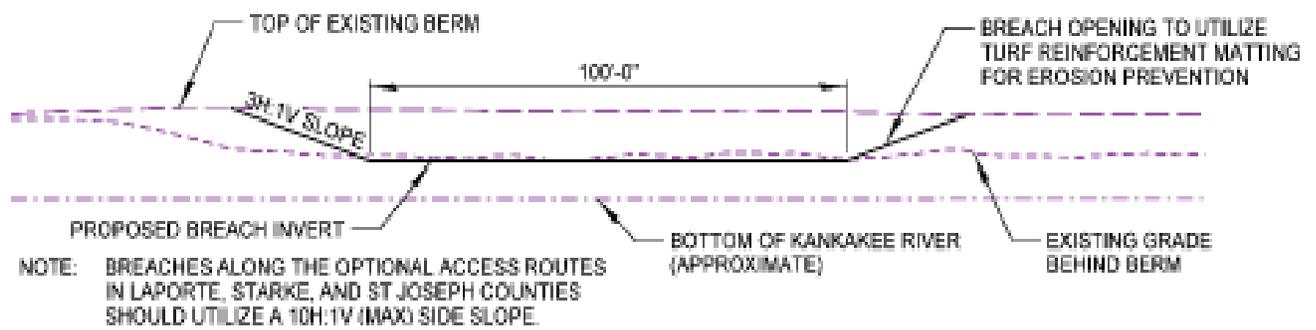
DESCRIPTION:

Work Plan Section 5.1.6

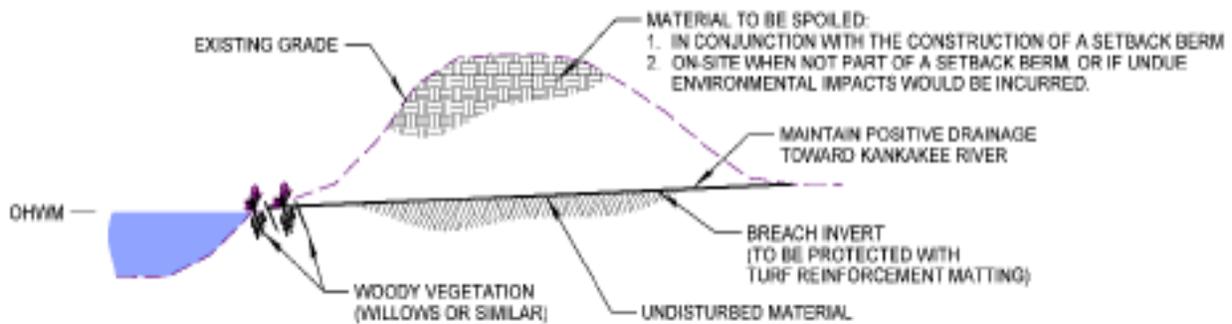
Strategically Remove Berms and Mitigate Flooding using Setback Berms

A system-wide set of constructed breaches in existing berms is recommended to activate inadvertently cut-off, naturalized floodplain areas and increase floodplain storage in particularly low-lying areas. The berm segments selected for breaching were carefully evaluated, preferentially selecting non-agricultural areas. Where the riverside berms were found to be continuous and provide some level of flood protection, alignments for setback levees were established to provide the same elevation of flood protection as the lowest point in the riverside berms protecting the area. The intent of the berm breaches and setback berms are to remove the need for maintaining the existing riverside berms, to provide more room for the river and connect it to its floodplain, and to eliminate the constant concern over bank and berm conditions.

In general, the berms along the Kankakee and its tributaries should not be maintained, and in many cases should be partially or completely removed. Berms that prevent effective use of areas identified as critical floodplain storage should be breached for a minimum of 100 feet at the upstream and downstream end of the berm to increase floodplain connectivity; additional breaches between the upstream and downstream ends may be necessary for larger floodplain areas and longer berms. Figure 15 and Figure 16 show a typical profile and a typical cross section of the suggested strategic breaches.



Typical Profile View of Strategic Breach in Existing Berm



Typical Section View of Strategic Breach in Existing Berm

Berms that provide meaningful flood protection to critical facilities or residential clusters away from the river channel should be removed or breached and replaced with strategic flood protection measures closer to the infrastructure or property being protected, as discussed in Section 5.1.10. Reinforcement or expansion of existing berms along the Kankakee by private landowners should be strongly discouraged and prohibited where possible. The ultimate objective of the strategic berm removal/breaching is to reestablish a functional floodplain adjacent to the main stem of the Kankakee and to eliminate the costs associated with maintaining features (berms) that are non-essential. The berm removal/breaching is intended to be strategic in that the reactivated floodplain areas are typically limited to natural wetlands or sub-marginal farmland.

Included in this recommendation is the removal/breaching of the internal berms at the Kankakee Fish and Wildlife Area to allow the free exchange of water between the Kankakee and Yellow River during flooding events. This will allow the rivers the greatest possible access to natural flood storage areas, return the Fish and Wildlife Area to a more natural hydrologic regime, and remove the need for active management by State entities in response to flood events.

Strategic removal/breaching of berms should be used to focus storage in designated areas to reduce impacts elsewhere. Storage opportunities may be encouraged and incentivized by purchasing property and leasing lands adjacent to the river, or by purchasing flood easements. Purchasing the property and leasing it to the previous (or other) landowner prevents the

landowner from experiencing a loss of land value while maintaining the ability to farm the area. Purchasing a flood easement provides the landowner with one-time compensation for potential future losses and allows the farmer to either farm the area or leave the area fallow. It may be more appropriate for some of the more flood prone areas to be purchased and kept in permanent wetland management.

Hydraulic analysis of a scenario where all of the berms adjacent to the Kankakee are removed suggests that flow rates could be reduced by approximately 15% and flooding elevations in certain areas being lowered by 1.5 feet. This scenario was simulated to gain an understanding of the full potential of Kankakee River berm removal; however, the existing berms along tributaries and field ditches were left in place, which prevents a full activation of all potential floodplain areas. The proposed breaches and setback berms were also simulated in the hydraulic model to determine the anticipated impact. Flow rates and flooding elevations were reduced by a smaller margin, 9% and 0.9 feet, respectively. These reductions in flow rates and flood elevations were variable depending on the location along the Kankakee and the current condition of local berms. Reaches of the river with smaller cross-sectional areas and/or berms that currently inhibit activation of available flood storage (e.g., near Davis, IN) generally saw greater reductions in flood elevation under alternative berm management scenarios than portions of the Kankakee that are wider and/or currently have greater access to floodplain storage (e.g. Dunn's Bridge or Shelby, IN).

The improvements are primarily aimed at producing a more resilient river, reducing flooding and erosion-related losses, and preventing future losses by providing additional floodplain storage and eliminating incompatible land uses; however, reactivation of disconnected floodplain and wetland areas is also expected to result in substantial ecological benefit. While the ecological benefits have not necessarily been the primary target for this Work Plan, maximizing this ancillary benefit may be key to streamlining the permitting process and, more importantly, helping to attract funding partners, as discussed in Section 6.3.

A schematic showing the location of recommended berm breaches is provided in Exhibits 3 and 4. The anticipated cost for the constructing the berm breaches and setback berms is approximately \$58.8 million; additional details concerning the cost of constructing the improvements is provided in Appendix 4.

It should be noted that the selection and alignment of setback berms, either existing or proposed/improved, shown on Exhibit 3 was based on a conceptual level of analysis using desktop methods. The location and condition of these berms have not been field-verified. The final decision as to the location of constructed berm breaches as well as the alignment and the need for improvement of any existing berm to act as a setback line of protection will be made prior to the design and construction phase of each berm segment and expected to involve detailed field visits, consultations with local authorities/property owners having more intimate knowledge about the condition of these berms, and additional hydraulic analysis (as needed).

LOCATION: Indiana areas adjacent to the Kankakee River, Yellow River, and their tributaries.

ISSUE: Manageable reconnection of the Kankakee and Yellow Rivers to their floodplains is a recommended action in all forty-years of the Kankakee River Flood and Sediment Management Work Plan.

The work plan recommends scores of potential floodplain reconnections along both channels. However, the achievability of a specific reconnections is influenced by factors such as:

- 1) Property owner consent;
- 2) Construction and acquisition costs;
- 3) Need for new flood control structures;
- 4) Permits and approvals from USACE, IDEM, INDNR, USFW, and NRCS;
- 5) Grants of easements;
- 6) Viable access; and
- 7) Mitigation costs and requirements.

In the context of its mission, it is in the Commission’s interest to maximize the safe storage of floodwaters for the least overall cost in dollars, time, and opportunity. For that reason, the Commission may choose to set formal criteria for ranking the potential value of floodplain reconnection areas.

RECOMMENDATION: The Technical Advisory Committee recommends that potential floodplain reconnection and floodwater storage areas be prioritized for development based on six criteria. The chart does not cover all possibilities, as many would be illogical or have a very low likelihood or occurrence. Some options are meant to demonstrate the absolute necessity for landowner consent and the importance place on a property’s inclusion in the work plan.

RANKING	LANDOWNER CONSENT	CONTROL STRUCTURE IN WORK PLAN	ZERO ACQUISITION COST	EXISTING SETBACK PROTECTION	PUBLIC LAND	NRCS EASEMENT ABSENT
1	Y	Y	Y	Y	Y	Y
2	Y	Y	Y	Y	Y	N
3	Y	Y	Y	Y	N	Y
4	Y	Y	Y	Y	N	N
5	Y	Y	Y	N	Y	Y
6	Y	Y	Y	N	Y	N
7	Y	Y	Y	N	N	Y
8	Y	Y	Y	N	N	N
9	Y	Y	N	Y	N	Y
10	Y	Y	N	Y	N	N
11	Y	Y	N	N	N	Y
12	Y	Y	N	N	N	N
13	Y	N	N	N	N	Y
14	Y	N	N	N	N	N
NOT CONSIDERED	N	N	N	N	N	N

This table is intended to guide the Commission when setting priorities regarding the development of floodwater storage, particularly when multiple opportunities are competing for funds within the Commission's budget. However, it is recognized that other, unpredictable factors might influence priorities for the development of potential floodwater storage properties. Possible factors include:

- 1) Acreage and overall hydrological impact;
- 2) Fixed time-windows for a property's availability;
- 3) The furtherance or preservation of a strategic Commission partnership;
- 4) Delays in permitting of higher-ranked projects;
- 5) Unusually high or low acquisition and setback flood protection costs;
- 6) Infeasible mitigation costs; and
- 7) Preference for a property's development through non-Commission conservation programs.

ADOPTED BY COMMITTEE 3/30/2021.