

# 2020 IEPA Annual Report



## Background

For nearly two decades, a diverse coalition of stakeholders (see Directors sidebar and Supporters list) has been leading a watershed-wide effort to understand and improve the water quality of the Fox River and its tributaries for the Fox River Study Group (FRSG). This undertaking has received wide-spread financial and in-kind support from watershed communities, water reclamation districts, environmental organizations and foundations. Our efforts have been backed by the USEPA, IEPA, Chicago Metropolitan Agency for Planning and engaged the scientific expertise of the Illinois State Water Survey (ISWS), United States Geological Survey (USGS) and private consultants. Throughout 2020, the FRSG continued to meet on a monthly basis and the group's activities were supplemented by committee actions.

## Modeling

To make informed decisions about how best to maintain and improve the quality of the Fox River in our urbanizing watershed, the FRSG has developed two computer models of the Fox River watershed – an HSPF model and a QUAL2K model. Updates of these models have been completed by Geosyntec Consultants with the HSPF model update substantially complete in 2018. The QUAL2k model relies on the HSPF model inputs. Geosyntec updated the QUAL2k model to QUAL2kw, a dynamic version of QUAL2k which was completed in December 2019. The use of the models to assess management scenarios to address the low dissolved oxygen and nuisance algae problems in the Fox River were underway throughout 2020. Model results will be used to help evaluate and determine the most cost-effective measures to improve the overall health of the river with respect to these impairments.

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## Monitoring

2020 concluded the 18th year of all-volunteer water quality monitoring efforts of the FRSG. The data collection includes monthly monitoring of 7 mainstem locations and 7 tributary locations along an 80-mile stretch of the Fox River from McHenry to Yorkville. Laboratory analysis and data management are donated as in-kind services by the City of Elgin, the Fox River Water Reclamation District, and the Fox Metro Water Reclamation District. These data have been utilized to support the modeling efforts over the years. Collection efforts were somewhat limited in 2020 due to staffing challenges posed by the COVID-19 pandemic. The Illinois State Water Survey (ISWS) updates the FoxDB for the FRSG, which is the publicly available, online water quality monitoring database. ISWS completed a full update in 2019 and is considering another update for 2021.

Additional monitoring is conducted in support of the modeling efforts. After discussions with Geosyntec on data needed for their modeling updates, a new water quality monitoring station was installed by USGS in August 2018 at the Stratton Dam ([USGS Station #05549500](#)). During the growing season, continuous measurements of temperature, pH, conductivity, dissolved oxygen, chlorophyll a, blue-green algae and turbidity are collected at this station. The USGS is also collecting in-situ measurements at the Stratton Dam to characterize the upstream boundary condition. The discrete samples are collected on a monthly basis during station equipment calibration and are analyzed for chlorophyll a, Nitrogen-Ammonia, Nitrogen Nitrate + Nitrite, Total Nitrogen (includes filtered organics), Phosphate-Orthophosphate, and Total Phosphorus. In August 2019, the FRSG asked the USGS to begin utilizing the blue green algae sensing capabilities of the chlorophyll sensor and to report the data at the station's website. This is one of the first uses of this sensor in the nation by USGS; efforts to find a lab able to analyze verification samples for blue green algae have been stalled due to the need of labs throughout the country to focus on COVID-19 pandemic analyses. This contract is for another spring through fall sampling and will conclude in October 2021. The FRSG is working on a three-year contract extension with the USGS to collect more real-time data at the Stratton Dam.

FRSG also began an effort to coordinate a data collection undertaking in conjunction with the Carpenter dam removal that the Forest Preserve District of Kane County is commencing with funding from the IDNR's Dam Safety Fund. The dam is scheduled to be removed during the summer of 2021 or 2022, depending on when the District has obtained all its needed permits. Working with a number of other agencies and consultants, we plan to conduct a number of pre-removal and post-removal studies to

document the impacts of the dam removal on water quality and fauna in the river. During the summer of 2020, IDNR fisheries biologists conducted fish surveys above and below the dam and IEPA biologists monitored macroinvertebrates. Both agencies carried out these studies as an in-kind contribution to this study. FRSG hired Deuchler Environmental who did pre-removal water quality sampling in the dam pool and at an upstream free-flowing stretch of the river. FRSG is also working out a contract with the Illinois Natural History Survey to conduct a mussel survey in 2021 before the dam is removed. All four studies will be repeated after the dam removal is completed.

## Reports

The FRSG was involved with three reports during 2020. First, the modeling work being conducted by Geosyntec will be utilized to amend the Fox River Implementation Plan (FRIP). This work is proceeding. The next phase of the project involves applying the updated model to simulate watershed improvement scenarios that combine the impact of several combinations of watershed management actions. This portion of the work is scheduled to be completed in 2021. The group is on target to meet the December 31, 2022 deadline for an updated FRIP submittal to the IEPA.

Second, the FRSG continued to work with the U.S. Army Corps of Engineers (Corps) to resume the Fox River Habitat & Connectivity Study (Study) that was placed on hold in August 2015 due to the lack of a State of Illinois budget. The FRSG has continued to communicate with the Corps and Illinois Department of Natural Resources (IDNR) to discuss the best path forward and remind the agencies of the FRSG's prioritization of the project and our willingness to provide IDNR with the funding to cover the local cost share needed to complete the study. In May 2020, IDNR let the Corps know officially that they are ready to resume the Illinois River Basin Restoration (519) Program which the Study falls under. IDNR also began preparation on a Joint Funding Agreement with FRSG. Despite the FRSG's best efforts, the project's was not approved for inclusion in the Corp's 2021 workplan. Corps Headquarters supports the study restart so our hope is that it will receive fiscal year 2022 funding and be included in the Chicago and Rock Island districts' 2022 workplan. Once the project is restarted, the timeline is one year to complete the original study, one year to complete the public outreach associated with the study, and one year to finalize the study and issue the final report. The Corps has also indicated they would like to complete the study in two years, if possible.

FRSG and the Chicago Metropolitan Agency for Planning began collaborating with other watershed stakeholders on the development for a watershed-based plan for the Indian Creek watershed in Kane and DuPage counties. The HSPF model for the Indian Creek watershed is being updated as part of this effort.

## **Public Outreach**

The FRSG has continued public outreach and participation as work has been completed to update the Fox River Implementation Plan (FRIP) as appropriate during the pandemic. The outreach focuses on the direct impacts of Fox River water quality on the members of the public, specifically on adverse impacts of high algae levels on drinking water, and on the efforts that the FRSG and wastewater treatment facilities are taking to reduce nuisance algae blooms. 2020 outreach efforts included:

Display and FRSG Board Volunteers Outreach – One Earth Film Festival, Waubensee Community College, Aurora Downtown Campus, March 9

Presentation – Fox River Dams: Should We Live With Them? Can We Live Without Them? The Conservation Foundation, May 21

Presentation – Leveraging Farm Bill Dollars for the Fox River, August 21

Presentation – Public Private Partnership pilot opportunity for funding green stormwater infrastructure (GSI) in the Fox River watershed, October 22

Three presentations - Fox River Study Group Annual Meeting, October 29

Presentation - Flint Creek/Spring Creek Watersheds Partnership Meeting, November 18

In January 2020, the group entered into a contract with Aileron Communications to perform public outreach messaging, branding, and a survey. Aileron conducted a phone survey of residents' attitudes towards the Fox River in February 2020. Findings included that 46% think the Fox River is somewhat or very polluted and 23% think the Fox River is somewhat or very unsafe for paddling, fishing or recreation. A summary of the phone survey results is available on our website [here](#). Aileron also helped FRSG refresh its web presence ([foxriverstudygroup.org](http://foxriverstudygroup.org)) and update our factsheet.

The FRSG board and membership has continued to work with entities throughout the Fox River watershed to build community support and to find the resources needed to implement the identified projects.

## **Point Source Nutrient Reductions**

The major (discharge > 1 mgd) wastewater treatment facilities were issued permits with phosphorus reduction requirements during the previous permit cycle. In late 2018 and extending into 2019, the Fox River permits were issued with updated phosphorus compliance schedules. Most wastewater treatment facilities are on schedule to meet their phosphorus limit of 1.0 mg/l annual average by various dates in 2019 to 2022.

Phosphorus discharge optimization plan (PDOP) requirements were added to most major permits during this permit cycle, requiring a comprehensive study of potential phosphorus input reductions and operational improvements at the wastewater treatment plants. These PDOPs are proceeding.

## **Financial Solvency**

The FRSG is a 501c3 not for profit organization. Independent audits are performed annually to ensure proper financial management and a copy of the 2019 audit is available upon request. FRSG continues to be funded by member agencies in the watershed at the rate of 25¢ per capita. At the beginning of each year, a contribution request is sent to communities. Due to the pandemic, the group has credited the 2020 contributions for two years, foregoing the 2021 contribution request as a rate relief gesture.

FRSG maintains a sufficient balance to fund activities and these funds are allocated to completing the action items described above: modeling, monitoring, public outreach, and the U.S. Army Corps of Engineers Fox River Habitat & Connectivity Study. In 2020, the group also developed a budget and long-term financial plan.

## Financial and In-Kind Supporters

The Fox River Study Group greatly appreciates the continued support from:

### Financial Support

Village of Algonquin  
City of Aurora  
Village of Barrington  
City of Batavia  
Village of Cary  
Village of East Dundee  
Village of Elburn  
City of Elgin  
Fox River Water Rec. District  
City of Geneva  
Village of Gilberts  
Kane County

Lake in the Hills Sanitary District  
City of Plano  
Village of Sandwich  
City of St. Charles  
Illinois EPA  
USEPA  
Village of Wauconda  
City of Yorkville  
Yorkville-Bristol Sanitary District

### In-Kind Support

Village of Algonquin  
City of Crystal Lake

City of Elgin  
Deuchler Engineering Corporation  
Environmental Defenders of  
McHenry County  
Fox Metro Water Reclamation District  
Fox River Water Reclamation District  
Friends of the Fox River  
Gardner Carton & Douglas  
Illinois EPA  
Illinois State Water Survey  
Northern Moraine Water Reclamation  
District  
Sierra Club