

**THE FAIRFAX DRAINAGE DISTRICT OF  
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**Board of Directors:**  
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**Martin L. Quinn, Vice President**  
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**TO: Fairfax Industrial District Businesses and Property Owners**

**FROM: Stephen P. Dailey, P.E., General Manager**  
**Andrew J. Dailey, P.E., General Manager**  
**Fairfax Drainage District**

**RE : FAIRFAX DRAINAGE DISTRICT UPDATE**

**INTRODUCTION**

In an effort to continue keeping the taxpayers of The Fairfax Drainage District informed of the flood protection improvements and operations, we are forwarding herewith a brief summary of the major events occurring over the past year and highlighting upcoming projects.

The total precipitation at the KCMO downtown airport for 2021 was 25.26 inches as compared to a normal rainfall of 39.16 inches (13.9 inches below normal). The 2021 precipitation compares to a 2020 precipitation of 26.31 inches, a 2019 precipitation of 43.80 inches, and a 2018 precipitation of 24.70 inches.

The highest river stage recorded in 2021 was on June 26<sup>th</sup> with a Hannibal Bridge gauge reading of 22.2 ft. This stage compares to a high reading of 25.7 ft. in 2020, a high reading of 36.6 in 2019, a 2018 high reading of 28.8 ft., and to the record stage set on July 27, 1993 of 48.9 ft. which surpassed all previous recorded high river levels for the Kansas City area. The levee crown corresponds to a river stage of 53.9 ft. As can be seen from the 2021 Missouri River hydrograph for Kansas City (shown in Figure 1), the monthly high river stages remained below normal high river stages throughout the year.

The Corps of Engineers has reported that the runoff above Sioux City, IA from winter snow melt and precipitation in the upper basin during 2021 was 15.2 MAF (million acre-ft) which compares to 31.1 MAF in 2020, 60.4 MAF in 2019, and 41.9 MAF in 2018. The 2021 runoff represents approximately 59% of normal (25.4 MAF). The 2022 calendar year runoff forecast for the upper Missouri Basin above Sioux City, IA, is 21.7 MAF (83% of average).

Four (4) days of pump station operation (all unmanned) were required during calendar year 2021 as compared to 10 days of pump station operation in 2020, 274 days in 2019, 77 days in 2018, 30 days in 2017 and an annual average of 45 days since 1993.

Automation of pump station operation has saved FDD taxpayers \$1,536,403 (2021 Dollars) since 1997.

## **SEWER LINE MAINTENANCE & RELATED ISSUES**

As mentioned in last year's annual report, failure of a section of 66" CMP (corrugated metal pipe) stormwater outfall line at the river side levee slope adjacent to Pump Station F-7 occurred during the 2019 flood event requiring temporary stabilization and repairs when the river (and groundwater) receded in late 2020. Repairs were started in late 2020 and have now been completed. The contractor on this project was Redford Construction Co. and the total cost of the project was \$1,011,354.37.

Since this project was eligible for disaster relief partial funding, a claim was made to FEMA and 85% of the total amount (\$859,651) was reimbursed to the Fairfax Drainage District. This amount included an allowable mitigation component to reline the old CMP repaired pipe using CIPP (cured-in-place pipe) technology.

An additional sewer maintenance project consisted of relining an 1800 ft. section of failing 36" VCP (vitrified clay pipe) sewer line along the east side of Fairfax Trafficway (between Quindaro Blvd. and Donovan Rd.) with CIPP. The contractor on this project was SAK Construction Co. and the total cost was \$324,175.

The FDD is in the process of contracting another relining project to be completed in 2022 which involves CIPP lining of approximately 350' of twin 66" Fiberglass Road sewers from Stanley Rd. to the main Fairfax collector sewer. Engineering design for this work should be completed in early 2022 by Alfred Benesch & Co. (est. cost is \$29,700). The cost of the CIPP lining project is estimated at \$700,000.

A major cleaning project was performed in 2021 of the Fairfax Main sewer covering an estimated total length of 9,100 feet of 7'5' x 10.5' RCB (reinforced concrete box) from Fiberglass Rd. to Quindaro Blvd. and 9' x 9' twin RCB from Quindaro Blvd. to the Jersey Creek Pump Station. The contractor on this project was Kissick Construction and the total sewer cleaning cost (including point repairs observed during the cleaning process) was \$653,311. It should be mentioned that CertainTeed partnered with the FDD on this project to remove 1,318 cu.yd. (cubic yards) of cullet debris which resulted in a total reimbursement to the FDD of \$270,704.

In late 2021, bids were let for an additional sewer cleaning contract and the successful bidder was HydroKlean. This work involves cleaning approximately 5,000 feet of sewer lines (estimated cost \$27,881) and is expected to mobilize in early 2022.

## **WELL MAINTENANCE**

The Fairfax Drainage District invested in well testing equipment several years ago and established a program to test each of the 127 levee relief wells every four (4) years. Wells identified for treatment during annual testing are then scheduled for cleaning in effort to restore lost production and avoid having to drill replacement wells. In 2021, 29 wells were tested and six (6) were identified for rehabilitation. These wells will be included with two (2) wells previously identified and scheduled for rehabilitation in 2022.

The FDD is in the process of stainless-steel lining the carbon steel upper casings in six (6) 1986 wells. The contractor on this project is Water Well Solutions and the cost is approximately \$191,000.

## **RIP RAP**

In 1996 the FDD completed a comprehensive analysis of the stone slope protection (rip rap) on the levee foreshore and determined there were areas needing additional rip rap as the original material was showing signs of deterioration. Beginning in late 1998 and continuing into 2001, the FDD began placing a 15" cover of new rip rap on the areas identified in the 1996 study. The FDD is pleased to report that the remaining deteriorated areas are now scheduled for new rip rap overlay in early 2022. The successful bidder for

furnishing and hauling rip rap material is ESI at \$1.3 million. The successful bidder for rip rap placement is L.G. Barcus at \$97,000.

### **LEVEE SEEPAGE COLLECTOR LINE**

As mentioned in last year's report, the FDD undertook a project to construct (2) prototype access manholes in an effort to determine the structural integrity of the perforated collector lines (collector line access manholes are necessary because the Corps of Engineers omitted them at the time the collector lines were originally constructed). The subsequent inspection of the collector lines revealed that they appear to be in satisfactory condition. In order to move forward with construction of some 75 additional manholes, the FDD is working with congressional offices and the Corps of Engineers to provide funding for the project. The project was included in the House version of the 2022 Energy and Water Bill but did not advance out of the Senate/House conference committee last summer. A new effort for inclusion in the 2023 Energy and Water Bill will be made in 2022.

### **MIL LEVY RATE & MISC.**

The total mil levy rate for 2022 was 19.567. The 2023 mil levy rate was slightly increased to 19.683 although the 2022 Ad Valorem Tax was slightly reduced from 2021. Over the years the FDD has striven to maintain consistency with its annual budgets while continuing to meet the demands of an aging flood control and interior drainage system. It is fortunate that several large projects have been undertaken in recent years without the need to sell bonds. While it is not the intent of the board to raise capital by selling bonds in the foreseeable future, subsequent budgets may include maintaining the mil levy rates near the current level (or slightly higher) in order to meet several needs such as replacement or relining of additional deteriorating corrugated metal pipe or vitrified clay pipe sewers (mentioned above), sewer cleaning, continued installation of collector line access manholes (mentioned above) if not funded by the federal government, replacing pump station roofs, relining the 1986 carbon steel pressure relief well casings, and building an emergency fund to meet unforeseen expenses associated with infrastructure failures.

In addition to the projects summarized in the preceding paragraphs, additional work completed in 2021 include awarding a new motor control center and transformer project at the Jersey Creek Pump Station at \$803,261 (to be completed in late 2022 by Superior Electric); testing of flood pumps in Pump Stations F-2 & F-10 (FDD); purchase of a new tractor and batwing mower at \$61,879 (Heritage Tractor) and \$17,260 (Golden Valley Tractor) respectively; and reroofing the Jersey Creek Main and Auxiliary pump stations at \$116,447 (Delta Innovative Services).

A search and interview process for replacing Steve Dailey as General Manager was conducted by the Board of Directors in late 2021 resulting in the hiring of Mr. Andrew Dailey beginning January 2022. The transition of the General Manager role will be completed at the end of 2022 / early 2023.

### **FAIRFAX DRAINAGE DISTRICT FACILITIES & REGULATIONS**

It should be stressed that, for security and liability concerns, the Fairfax Levee is not open to the general public. The FDD recently adopted its Floodplain Management Plan which stipulates that public access to the Fairfax Levee for recreational hiking and biking is not permitted -- as doing so would expose the FDD's flood protection system, adjacent property owners and all Fairfax businesses to increased levels of risk. If, however, you have an interest in touring our flood protection facilities, we would be more than happy to give you a personalized tour. Some pictures from the 1993 flood event are also available for viewing.

FDD constituents are reminded that there are certain regulations in place as they relate to **all** subsurface work in Fairfax and that businesses (or their hired consultants and contractors) are required to submit plans and specifications to the Drainage District for planned excavations, sewer connections, well installations, subsurface structure abandonment, utility installations, etc. **prior** to beginning the project(s) so that we can verify all Corps of Engineer requirements are met and that the flood protection facilities and storm sewer infrastructure are not compromised. Your cooperation in this regard is appreciated by the FDD and all of the businesses in Fairfax.

### River Stages by Month 2021 Compared to Normal and Record High

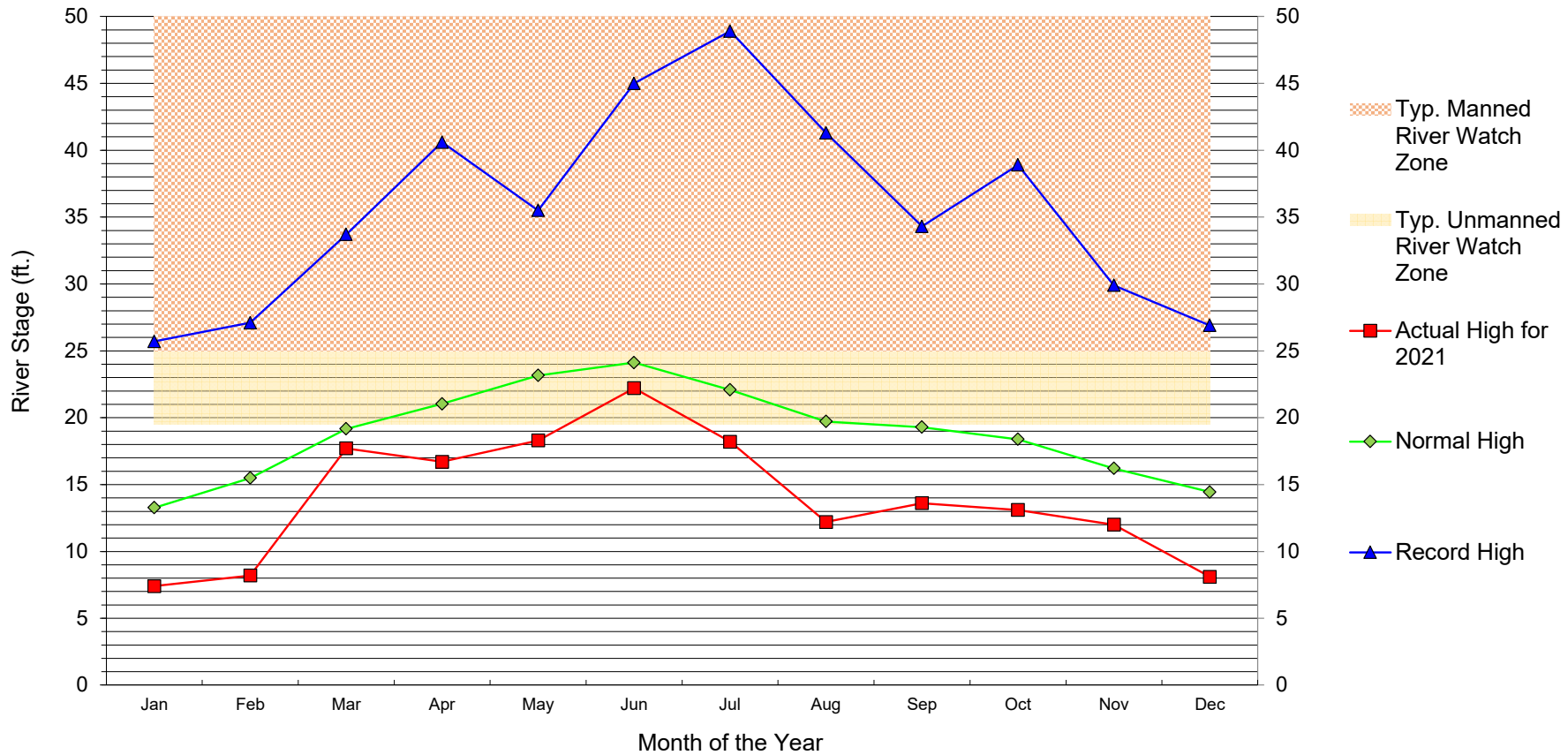


Figure 1