

# 2022 ANNUAL REPORT

Protecting people, property, and our environment  
through preservation, mitigation, and education



## A NOTE FROM MHFD EXECUTIVE DIRECTOR LAURA KROEGER

**WE ARE PLEASED TO PRESENT THE** annual report for fiscal year 2022 highlighting the accomplishments of the Mile High Flood District (MHFD). This year's common thread seen throughout our work was the emphasis on Connections.

The new Urban Stream Management Approach developed by MHFD is focused on connecting the planning, design, construction, and maintenance process with all 5 Elements of an urban system; Community Values, Hydrology, Hydraulics, Geomorphology, and Vegetation. Ensuring holistic solutions are implemented that reflect the values of the community.



MHFD Annual Symposium in Downtown Denver

At the Annual Symposium, over 500 industry partners reestablished relationships and enjoyed the networking as much as the content presented. Larimer County Dive Rescue Team received the Mile High Friend of the District Award for generously giving their time, expertise, and passion for public safety to improve the design criteria for safety grates.

After several years of envisioning a web-based stormwater collaboration platform to collect, share, and utilize data more effectively, the first module of MHFD Confluence was launched. We've received great feedback and will continue improving the product and adding new features.

With unanimous Board support in early April, we signed the papers to purchase a building on 12575 W. Bayaud in Lakewood. The remainder of 2022 was dedicated to designing and starting construction of a remodel that best utilizes the space for current and future needs.

Like many other organizations, we continued to adapt to a new hybrid working environment while considering the value of connecting with our partners. After soliciting feedback from our staff, we established Tuesdays as our all-in-the-office day, where we host most internal, face-to-face meetings. The new office space has various meeting options for connecting individuals and teams.



Our new location at 12575 W Bayaud Ave in Lakewood

As we embrace the flexibility to perform work from multiple places, we recognize that we are a people industry. We serve the public to address complex stormwater problems by working in diverse, collaborative teams. To be most effective, we need to prioritize relationships. Through personal interactions, we build trust and improve communication to identify and break down barriers and seek multiple benefit solutions. So, we will continue encouraging in-person meetings to reengage with each other and the public to protect people, property, and our environment from flood risks.

I will conclude with gratitude for our supportive Board of Directors and our internal team, who continue to adapt and grow to achieve our mission and vision. Together with our partners, we will continue to create a safer and more beautiful place to live.

## BOARD OF DIRECTORS



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**Adam Paul**  
Mayor  
City of Lakewood



**CHAIR PRO TEM**  
**Bud Starker**  
Mayor  
City of Wheat Ridge



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**Nancy Sharpe**  
Commissioner  
Arapahoe County



**TREASURER**  
**Stephanie Piko**  
Mayor  
City of Centennial



**MEMBER-AT-LARGE**  
**Jan Kulmann**  
Mayor  
City of Thornton

### GOVERNING BODY

21

Locally-appointed  
Elected Officials

2

Licensed Professional  
Engineers

## BOARD MEMBERS

**Mr. Michael Anderson**  
Engineer, Retired

**Commissioner Lynn Baca**  
Adams County

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City of Aurora

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City and County of Broomfield

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City and County of Denver

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City and County of Boulder

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City and County of Denver

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City and County of Denver

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Engineer, Retired

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City and County of Denver

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**Commissioner Lora Thomas**  
Douglas County

**Mayor Marc Williams**  
City of Arvada

PROJECT HIGHLIGHT

# THE NIVER TRIBUTARY M FROM THORNTON PARKWAY TO HURON STREET RESTORATION PROJECT

**M**HFD AND THE CITY OF THORNTON ARE EXCITED TO SHARE THAT THE Niver Tributary M Restoration Project from Thornton Parkway to Huron St has been completed successfully. This project was an essential step towards restoring an 1800 linear foot stretch within the Niver Creek watershed in the City of Thornton. Our team worked hard to make several enhancements, including channel upgrades, sculpted concrete drop structures, pedestrian crossings, culvert with pedestrian underpass, storm drain infrastructure, and trail improvements.

With the new culvert crossing, this project has eliminated 100-year flood flows from overtopping Huron Street, removed 14 structures from the floodplain, increased the carrying capacity within the channel, and enhanced the riparian corridor with a diverse vegetation community. The channel and culvert upgrades at Huron Street significantly reduced public flood risk while also providing a pedestrian trail connection into the Niver Open Space. We are proud of our team's hard work and dedication, which made this achievement possible. We look forward to celebrating more successes in the future and are grateful for the opportunity to contribute to the Niver Tributary M restoration project in Thornton, Colorado.

PROJECT SPONSORS

- MHFD
- City of Thornton

MHFD TEAM

- Andy Stewart
- Joe Williams
- Colin Haggerty
- Drew Roberts
- Mary Powell
- Mike Sarmento
- Dave Skuodas

DESIGN TEAM

- ICON Engineering, Engineer
- Valerian, Landscape Architect
- ERO Resources Corporation, Environmental Permitting
- San Engineering, Structural
- Kumar, Geotechnical
- SurvWest, Survey

CONSTRUCTION TEAM

Naranjo Civil Constructors  
Habitat Management Inc., Revegetation

CONSTRUCTION COMPLETED

Winter 2022

TOTAL PROJECT COST

Approx. \$5.1M



RESEARCH PROJECT HIGHLIGHT

## QUANTIFYING STORMWATER RUNOFF FROM GREEN ROOFS IN THE COLORADO FRONT RANGE

**G**REEN ROOFS ARE VEGETATED ROOFS constructed on buildings and over other structures that help reduce stormwater runoff volumes and rates. MHFD collaborated with an academic research team at Colorado State University (CSU) to perform stormwater monitoring and research on green roofs. The research objectives were (1) to understand better how different vegetated roof systems function in the semi-arid climate, (2) to quantify and compare stormwater runoff flow and volume for different systems, (3) to evaluate and assess vegetation health for plantings in different types of green roof systems, and (4) to inform regional criteria for green roofs.

Related work will continue in 2023 at CSU's SPUR Campus. This project was funded by MHFD and by Colorado State University.

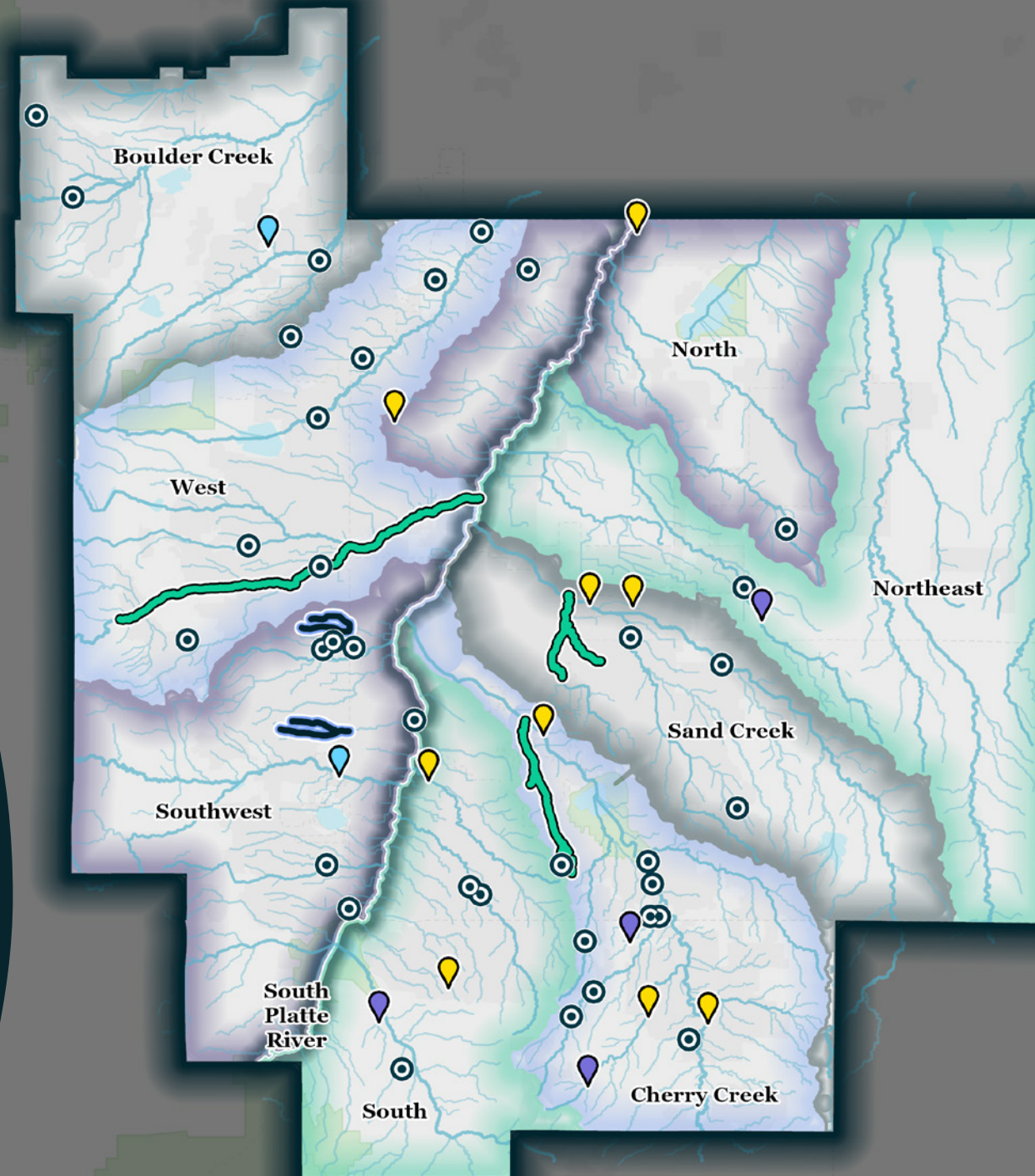


PROJECT HIGHLIGHTS

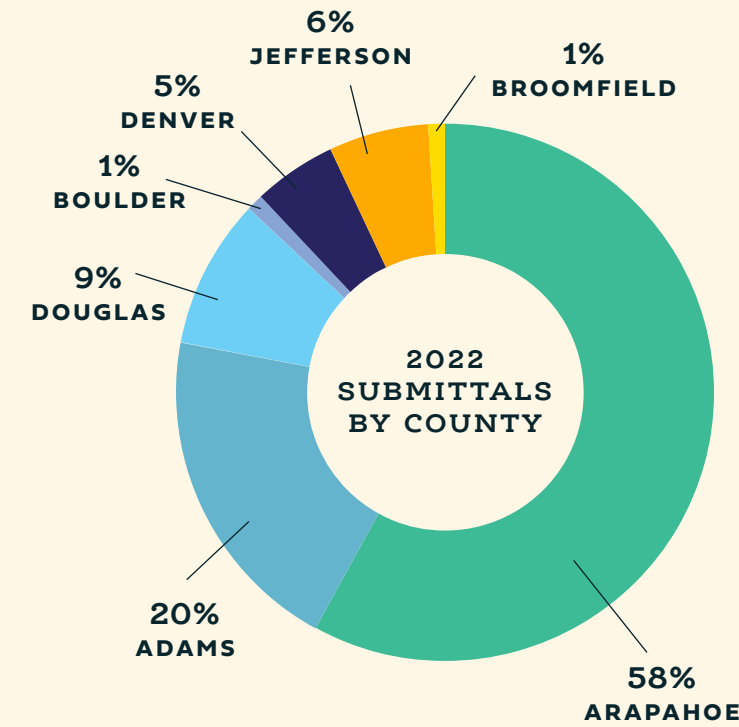
- A detailed literature review, data collection, and field research study on green roof systems in the Colorado Front Range.
- Measured results from three different green roof test systems and a control roof quantifying runoff from different rainfall events.
- Demonstrated and improved procedures, equipment, and troubleshooting for stormwater monitoring in a real-world setting.
- Improved understanding of vegetation health of different plantings in green roof systems.

# WORK COMPLETED IN 2022

- Floodplain Letters of Map Change (35)
- Capital Improvement Projects (9)
- Development Improvement Projects (4)
- Restoration (2)
- Physical Map Revisions (2)  
9 Stream Miles
- Studies (3)  
34 Stream Miles



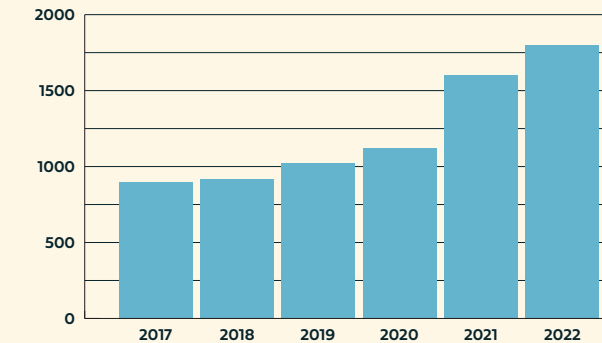
# MEP WORK COMPLETED



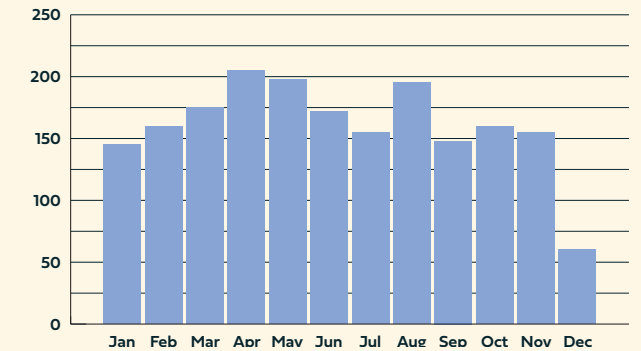
**M**HFD ASSISTS LOCAL GOVERNMENTS WITH REVIEWS OF development projects through the Maintenance Eligibility Program (MEP). By successfully completing the MEP process, projects are eligible for maintenance assistance by MHFD.



SUBMITTALS OVER THE YEARS



2022 SUBMITTALS BY MONTH



# EDUCATION & OUTREACH

**I**N 2022, MHFD PARTNERED WITH The Greenway Foundation (TGF) to sponsor and participate in events to promote watershed stewardship and provide outreach and education to the public. MHFD staff volunteered to help remove plant debris, repair crusher fine trails, repair and paint park fixtures, and remove trash from our local parks as part of Stewardship Days. At TGF's CrossCurrents event, MHFD staff engaged attendees with an interactive "flood table" where they learned the importance of flood storage.

We were thrilled to host our biggest Annual Symposium event yet with over 500 attendees! The Stream Management Academy continued in 2022 with a combination of classroom and field time. We also continued to partner with the Colorado Stormwater Center and the APWA Public Works Institute by hosting and co-instructing classes.

**42K+**  
Flood Hazard Brochures delivered to residents in higher-risk areas



MHFD Staff engage CrossCurrent attendees with an interactive "flood table" where they learned the importance of flood storage.

**4300+**  
Professional Development Hours granted through MHFD programming

**538**  
MHFD Annual Symposium Registrants

**1300+**  
Additional Professional Development Hours granted through MHFD Partnerships

**18**  
New Watershed Ambassadors graduated from the Stream Management Academy

**31,000+**  
MHFD YouTube Watches

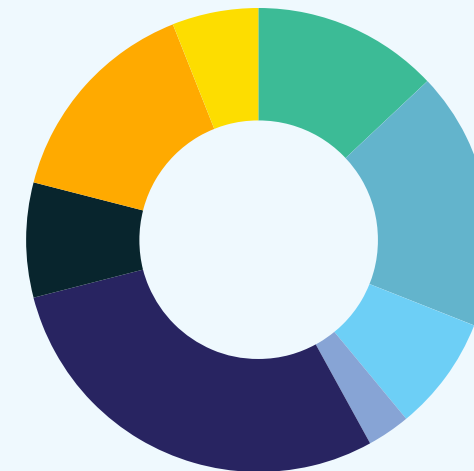
**2100+**  
Hours of MHFD YouTube Content Watched

## 28 DAYS WITH FLOOD POTENTIAL IN 2022



# 2022 FINANCIALS

County Revenues	Amount
Adams County	\$9.6 M
Arapahoe County	\$13.6 M
Boulder County	\$6.5 M
Broomfield County	\$2.1 M
Denver County	\$22.5 M
Douglas County	\$6.5 M
Jefferson County	\$11.1 M
Miscellaneous	\$4.6 M
<b>Total Revenue</b>	<b>\$76.5 M</b>



Service Expenditures	Amount
Construction Projects	\$24.760 M
Maintenance Services	\$20.667 M
Payroll and Benefits	\$7.432 M
South Platte River	\$6.429 M
Future Base of Operations Reserve	\$5.300 M
Operations and Development	\$3.729 M
Operating Costs	\$2.317 M
Floodplain Reservation	\$1.280 M
Floodplain Management	\$1.760 M
Watershed Planning Studies	\$1.178 M
Flood Warning	\$1.139 M
Contract Services	\$0.177 M
<b>Total Expenditures</b>	<b>\$75.998 M</b>
<b>Development Services Enterprise</b>	
Land Development Projects	\$4.257 M

## 2022 NEW EMPLOYEES



**Will Barkman, PE** relocated from Kansas City to join MHFD in January as a Project Engineer. Will came to the District with over 17 years of engineering experience. He has a BS in Civil Engineering from Kansas State University and an MS in Physics from the University of Missouri-Kansas City.

**Fun Fact:** Will taught College Physics at the University of Missouri Kansas City and University of St. Mary.



**Bruce Rindahl, PE** relocated from California to join MHFD in February as our Flood Warning Manager. Bruce comes to us from the Ventura County Watershed Protection District with over 38 years of experience in a wide variety of water resource disciplines, 12 years include managing the Flood Warning System. Bruce has a BS in Civil Engineering from the University of Tennessee and an MS in Applied Mathematics from the University of Colorado.

**Fun Fact:** In 1994, Bruce posted the very first real-time weather data on the World Wide Web. He's also a member of the Colorado Swimming Hall of Fame.



**Ryan Tigera, PE** began his career at MHFD in March as a Project Engineer. Ryan comes to us with close to 7 years of engineering experience in civil plan reviews, stormwater studies, and has served as the point of contact for Aurora Water engineering related questions. Ryan has a BS in Civil Engineering from CU Denver, and an MS in Hydrology and Hydraulics from CU Denver.

**Fun Fact:** Ryan served as a Wild Land Firefighter before going into engineering. He has three kids and enjoys being outdoors with them whenever possible.



**Haley Koesters, PE** joined MHFD in March as a Project Engineer. After completing grad school, Haley spent nearly three years working as an environmental engineer two years working as a hydraulic design engineer and deputy project manager. Haley holds a BS in Civil Engineering from the University of Arizona and a MS in Civil and Environmental Engineering from the University of Washington in Seattle.

**Fun Fact:** Haley loves to be outdoors whenever possible and the same goes for her dog, Lola. She enjoys tennis, gardening, hiking, camping, and travel.



**Derek Clark, PE** started his MHFD career in May as a Project Manager. He comes to us with almost 8 years of engineering experience in a wide array of stormwater engineering projects. His experience includes drainage basin master planning, floodplain modeling/mapping, as well as open channel, storm sewer, and water quality design. Derek has a BS in Civil Engineering with a concentration in Water Resources, from the University of Texas at San Antonio.

**Fun Fact:** Derek once served as a Gang Intelligence Deputy with Bexar County Sheriff's Office, San Antonio, before going into engineering.



**Andy Stewart, PE** began his career at MHFD in June as a Watershed Manager. Andy came to MHFD with 15 years of engineering experience in both the public and private sector. Andy's extensive experience working on stream restoration and flood control projects in the Denver metro coupled with his project management and floodplain management experience has positioned him to join our team. Andy has a BS in Civil Engineering from the University of Colorado at Denver and is a Certified Floodplain Manager.

**Fun Fact:** Andy and his wife, Jamie, have two beautiful children, Sullivan and Emersyn and a loyal dog named Archie. They love to ski and be in the mountains.



**Teddy Larkin** has over two years of professional GIS experience working with Esri ArcGIS in creating visual products, conducting spatial analysis, managing datasets, and much more. He comes to us, highly recommended, from USGS. Teddy has a BA in Geology from Whitman College, Walla Walla, Washington.

**Fun Fact:** Teddy loves to ride and race road, mountain, and gravel bikes and is also an avid trail runner.



**Jen Winters, PE** began her career at the District in September as a Watershed Manager. Jen came to MHFD with over 20 years of experience includes a broad range of water resources engineering, including floodplain management, water quality permitting, hydraulic modeling, stormwater design and master planning projects. Jen has a BS in Civil Engineering from Virginia Polytechnic Institute and State University.

**Fun Fact:** Jen lives in Wheat Ridge with her wife Andrea and her daughter, Hazel. Jen once rode her bike across Bavaria, Germany and has enjoyed bike trips in Colorado, Arkansas, and Utah.



**Katie Kerstiens, PE** returned to MHFD in October as a Staff Engineer. Katie first started her MHFD career back in 2017 as a Student Intern. Since her departure, she has gained experience in floodplain management projects, including developing hydrologic and hydraulic models as well as experience in CIPs ranging from plan production and design to developing stormwater management plans. Katie has a BS in Environmental Engineering and an MS in Civil and Environmental Engineering, both from the Colorado School of Mines.

**Fun Fact:** Katie has 3-year old dog named Murray and they love going on adventures together including hiking, camping, and paddle boarding.



**Kyle Donovan, PE** began his MHFD career in November as a Watershed Manager. Kyle has over 17 years of engineering experience, including civil and water resources.

Kyle has managed several large multidisciplinary water resource projects along the Front Range. Kyle has a BS in Civil Engineering from Colorado State University.

**Fun Fact:** Kyle has a horse name Lady that he and his wife, Leah, spend time with any chance they get. In 2022, Kyle ran a ½ marathon every month for a total of twelve half-marathons.



MHFD

MILE HIGH FLOOD DISTRICT

12575 W. Bayaud Avenue  
Lakewood, Colorado 80228

[MHFD.org](http://MHFD.org)

303.455.6277