UPPER EAGLE REGIONAL
WATER AUTHORITY

GOVERNED BY:

The Metropolitan Districts of:
Arrowhead
Beaver Creek
Berry Creek
EagleVail
Edwards

The Town of Avon

**M E M O R A N D U M**

**TO:** Board of Directors

**FROM:** Brian Thompson, Government Affairs Administrator

**DATE:** March 17, 2023

**RE:** March 23, 2023, Board Meeting

This memorandum shall serve as notice of the Regular Meeting of the Board of Directors of the Upper Eagle Regional Water Authority:

**Thursday, March 23, 2023**
**8:30 a.m.**

**This meeting will be held in-person**
Walter Kirch Room
Eagle River Water & Sanitation District Vail office
846 Forest Road
Vail, Colorado

The meeting can also be accessed on Microsoft Teams. Login information can be requested by sending an email at least 24 hours in advance to info@erwsd.org. In-person attendance is subject to public health protocols.

Input from members of the public is welcomed during the meeting's designated Public Comment consistent with §18-9-108, C.R.S. Speakers may address the Board on a first-recognized basis by the Chair. Public Comments are limited to three minutes per speaker on relevant matters not listed on the agenda.

UPPER EAGLE REGIONAL WATER AUTHORITY

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BOARD OF DIRECTORS REGULAR MEETING
March 23, 2023
**8:30 a.m.**
Walter Kirch Conference Room

**AGENDA**

| | | |
|---|---|---|
| **1.** | **Introductions** | **Attachment Link** |
| **2.** | **Public Comment** | |
| **3.** | **Action Items** | |
| **3.1.** | Approval of minutes from Feb. 23, 2023, Regular Meeting | Action Item |
| **3.2.** | Approval of minutes from Feb. 23, 2023, Regular Joint Meeting with ERWSD | Action Item |
| **3.3.** | Rules and regulations updates – Tug Birk | Action Item |
| **3.4.** | Board committees update – Diane Johnson | Action Item |
| **4.** | **Information Reports** | |
| **4.1.** | Development report | Informational |
| **4.2.** | February meeting summary – draft | Informational |
| **4.3.** | Contract log | Informational |
| **5.** | **Board Member Input** | |
| **6.** | **General Manager Report – Siri Roman** | |
| **6.1.** | GM information items | |
| **6.2.** | Business Administration report – David Norris | |
| **6.2.1.** | Water conservation program update | |
| **6.2.2.** | Safety program update – Dan Siebert & Michael Rae | |
| **6.3.** | Operations report – Brad Zachman | Informational |
| **6.3.1.** | Macroinvertebrate sampling – Leah Cribari | Informational |
| **6.4.** | Engineering and Water Resources report – Jason Cowles | Informational |
| **6.5.** | Communications and Public Affairs report – Diane Johnson | Informational |
| **7.** | **Water Counsel Report – Kristin Moseley** | |
| **8.** | **General Counsel Report – Kathryn Winn** | Confidential |
| **9.** | **Executive Session** | |
| **9.1.** | Motion to move into Executive Session pursuant to §24-6-402(4)(b) and (e), C.R.S., to receive legal advice and discuss matters in negotiation related to: | |
| **9.1.1.** | Bolts Lake obligations | |
| **9.1.2.** | Proposed state legislation **–** Stream Restoration Bill | Confidential |
| **9.1.3.** | Water rights report | Confidential |
| **10.** | **Any Action as a Result of Executive Session** | |
| **11.** | **Adjournment** | |

Return to agenda

EAGLE RIVER WATER & SANITATION DISTRICT

UPPER EAGLE REGIONAL WATER AUTHORITY

# BOARD ACTION REQUEST

**TO:** Eagle River Water and Sanitation District, Board of Directors

Upper Eagle Regional Water Authority, Board of Directors

**FROM:** Tug Birk, Development Review Coordinator

**DATE:** March 23, 2023

**RE:** 2023 Rules and Regulations Revisions

**Summary of Subject**: Update to the Rules and Regulations with revisions to the Main Body and several of the Appendices.

**Discussion and Background**: The Construction Review Team (CRT) has developed a process to update the Rules and Regulations that provides for timely annual revisions. These revisions are presented to the Board near the beginning of each year in an effort to continuously improve upon our construction standards and regulations so that they remain current with industry standards, best practices, and other applicable regulations. Revisions are proposed to the Rules and Regulations in Articles IV and VI, and Appendices B, C, D, and E. No revisions have been proposed for Appendices A, F, G, or H at this time. Revisions are summarized in a 2-page summary document and the full text of revisions is included in the attached supporting documentation.

In order to be more transparent and to include affected stakeholders in the revision process, an online meeting was held on February 24, 2023, with local land use agencies, engineers, excavators, developers, and builders who perform work on water and wastewater infrastructure within the service area. Of the forty six companies/organizations invited to attend, nine were represented during this meeting. The proposed revisions were presented and discussed with the attendees. Several questions were asked, and appropriate answers were provided. None of the questions resulted in any further revisions to the Rules and Regulations. These revisions also were presented to, and reviewed by Senior Management, Legal, and the Rules and Regulations Subcommittee at a meeting on March 8, 2023.

**Alternatives:** Leaving the Rules and Regulations as is or suggest further revisions.

**Legal Issues:** Legal Counsel has reviewed the revisions and no changes were requested.

**Budget Implication:** None

**Recommendation:** Staff recommends that the Board approve the revised Rules and Regulations, as presented.

**Suggested Resolution and Motion:** **I move to approve the revisions to the Rules and Regulations as presented for 2023.**

**Attached Supporting Documentation:**
Table of Contents & Summary
Rules and Regulations Articles IV and VI Revised Sheets
Appendices B, C, D, E Revised Sheets

Thank you for your consideration of these revisions. Please let me know if you have any questions or comments regarding the proposed revisions.

EAGLE RIVER
WATER & SANITATION
DISTRICT

# 2023 Rules and Regulations Revisions

## Table of Contents & Summary - February 2023

1. Main Body
    - 4.5.20 - Landscape Irrigation Accounts, (Pg. 50)
        - Separate meters will be required for all irrigation (outdoor) and domestic (indoor) uses other than single family and duplex residential accounts.
    - 6.7 - Directional Drilling/Boring, (Pg. 57)
        - All boring projects and exposed crossings to be verified and referred to ERWSD to help avoid potential damage to District assets.
    - 6.8.13 - Irrigation and Outdoor Use Regulations-General, (Pg's 60-61)
        - Revision to approved watering times to match the District's current watering times; before 8:00 a.m. and after 6:00 p.m.
    - 6.8.14 - Irrigation Permits, (Pg. 61)
        - Revision to approved watering times to match the District's current watering times; before 8:00 a.m. and after 6:00 p.m.
2. Appendix A
    - No Changes

3. Appendix B
    - 1.5 - Authorization to Connect, (Pg. 2)
        - Add proposed main line connection points to the list of requirements on a site plan associated with a connection application.
    - 2.10.2 - Water Service Testing, (Pg's 9-10)
        - Verification required to ensure that pressure has been holding for at least two hours (time stamped photos are acceptable)
    - 2.14 - Meter Pits, (Pg. 13)
        - Metal conduit added to protect wire. Conduit must be a minimum of 24" in length with a minimum of 18" exposed above ground level.
    - 3.8.1 - Wastewater Service Connections, (Pg's 17)
        - A minimum of 48-hour prior notice for new sewer main taps to confirm existing sewer main pipe size and material.
4. Appendix C
    - 2.6.16 - Encased Piping, (Pg. 12)
        - Updated reference to Appendix D.

5. Appendix D
    - 2.3 - Sizing Collection Mains, (Pg. 7)
        - Clarifying minimum velocity versus minimum slope priorities. In certain cases, a minimum slope will supersede the minimum velocity.
    - 2.4.1 - Easement Width Requirements for Main Installations, (Pg's 7-8)
        - Right of Way installation is preferable over easements.
    - 2.5.8 – Manholes, (Pg's 10-11)
        - Manhole access lids to be 36" diameter on 18" or larger sewer mains for equipment access purposes. The standard manhole opening is 24" diameter.
    - 2.6.3 - Horizontal and Vertical Separation from Potable Water Mains, (Pg. 13)
        - Where possible, encase sewer and storm sewer using flowable material instead of water main.
    - 3.3.11 - Interior coatings, (Pg. 19)
        - Interior coatings to be installed by a qualified applicator.
    - 5.3 - Manhole Testing-General Requirements, (Pg. 29)
        - All newly installed manholes to be tested by vacuum testing per ASTM C1244.
6. Appendix E
    - 1.12 - Tracer Wire, (Pg's 7-11)
        - Material revisions: grounding anodes are no longer required.
        - Installation revisions: details on how to attach tracer wire to mains were added.
        - Tracer wire testing access points on structure or near structure were clarified.
7. Appendix F
    - No Changes
8. Appendix G
    - No Changes
9. Appendix H
    - No Changes

# RULES AND REGULATIONS
# FOR
# WATER AND WASTEWATER SERVICE

EAGLE RIVER
WATER & SANITATION
DISTRICT

Last Approved Revision: February 24, 2022

provisions as expansion of use discovered by the District and the Customer shall then be subject to the provisions of Article IV, Additional Assessment of Fees. Any Unauthorized Use, once discovered, shall be paid for at the same rate as if that use had been authorized.

### 4.5.19 Fire Suppression Systems

If a fire suppression system is to be used, a plan of the fire suppression system approved by the appropriate fire protection authority is to be submitted to the District with the New Account Application. The fire suppression service and domestic water service shall be designed as required by the local fire authority. All fire suppression systems shall meet National Fire Protection Association (NFPA) requirements and additionally shall meet the requirements of all applicable municipal, county, and state building and fire protection codes. All fire suppression systems shall be protected from fluctuating Water Main pressures by a pressure-reducing valve.

As dictated by the State of Colorado, all fire suppression systems shall be equipped with a backflow prevention device appropriate to the degree of hazard present on the site. Refer to Appendix G, Backflow Prevention and Cross Connection Control Program.

### 4.5.20 Landscape Irrigation Accounts

Landscape Irrigation Accounts are specific to outdoor water use metered separately from indoor use on the premises. Irrigation water use for single family and duplex residential developments is usually combined with the Customer's total water use at the property and the connection shall be made downstream of the meter and backflow prevention assembly, unless a separate meter is requested to meter landscape irrigation at the property. All other uses require separate meters for irrigation (outdoor) and domestic (indoor) use, utilizing one connection to the water main. There are two types of Landscape Irrigation Accounts:

(a) ***Landscape Sprinkler Account*** – is for outdoor metered water use associated with a structure. The District, upon approval of a New Account Application, will authorize a Water Service Connection without payment of a separate Impact Fee for the Landscape Sprinkler Account. All other Connection Fees and rates for the associated structure, however, must be paid, and requirements met prior to authorization of the Connection for the Landscape Sprinkler Account. For Landscape Sprinkler Accounts, the Impact Fee is paid as part of Impact Fees paid for the related structures.

(b) ***Irrigation Account*** – is for outdoor metered water use from a stand-alone irrigation system, not associated with a structure. The District, upon approval of a New Account Application, will authorize a Water Service Connection for the Irrigation Account. All other requirements shall be met prior to authorization of the Connection for the Irrigation Account. Water

## 6.5 Locating District Facilities

The District is a Tier 1 utility under Colorado's One call Law (Section 1.Article 1.5 of title 9.CRS). The requestor shall utilize the 811 system for locate requests. For private service lines with in the Right-of-Way, the District will attempt to locate and mark all water (including curb stops) and sewer service lines with in the Right-of-Way to the best of its ability by using available information. Basic line locations will be made free of charge, but the District will not accept financial liability to any party for any costs incurred as a result of an inaccurate location. The District, by providing such location services, does not waive or intend to waive the monetary limitations or any other rights, immunities, defenses and protections provided by the Colorado Governmental Immunity Act, § 24-10-101, et seq., C.R.S., as from time to time amended (the "CGIA").

## 6.6 Underground Locatable Facilities

All newly installed underground facilities must be electronically locatable per C.R.S Title 9, Article 1.5-103 (10). Tracer wire will be required on all District Faclities to include water and wastewater mains as well as privately owned service lines. See specific requirements in Appendix E.

Directional Drilling/Boring

All d~~D~~irectional d~~D~~rilling and/or boring projects shall be referred to the District. When utilizing trenchless excavation methods, the contractor shall expose underground facilities and visually observe the safe crossing of marked underground facilities ~~and any permitting agency shall require exposure and visual confirmation of a safe crossing~~ per CRS-9-1.5-103-(4)(c) (I) (A). All sewer mains must be televised by the contractor, and footage submitted to the District for review, both prior to the commencement of the work and after the completion of the work. Per CRS 9-1.5-102 (6.8) (B) a Subsurface Utility Investigation must be completed for utility boring projects. See Article 2.99.

## 6.7 Scheduling Service or Inspections

Customers may be required to schedule District service or inspections from time to time. Appointments for inspections or services, such as Turn-On, Turn-Off, operation of Water Main valves, water meter, transceiver battery changes, flush or flow tests must be scheduled with the District a minimum of two (2) business days in advance. Appointments that have been rescheduled for the following reasons; not ready for inspection, failed, no shows, and not properly scheduled will be charged a Re-Inspection Fee.

## 6.8 Use of Water System

### 6.8.1 All Water Use Metered

for maintaining the following clearances around fire hydrants located on or adjacent to their property: ten (10) feet in the front, seven (7) feet on the sides, and four (4) feet in the back. If the required clearances are not met, ERWSD personnel will remove such obstructions after seven (7) days written notice is given or immediately in cases of emergency, the costs of which may be added as a charge to the property owner's monthly bill. The health, safety, and welfare of the public and the critical emergency service nature of fire hydrants require that clearances be maintained at all times. Refer to Appendix C, Standards Details for Water Mains, Fire Hydrant Assembly, for a diagram of the proper clearances.

### 6.8.10 Construction Water / Fire Hydrant Meter Assemblies

***Construction Water*** – Construction water for use on private property shall be taken only through an authorized Water Service Connection and shall be metered. Such water use shall conform to the provisions of Article IV, Temporary Water Service.

***Fire Hydrant Meter Assemblies*** – The use of a fire hydrant meter assembly is permitted only with the written authorization of the District. A fire hydrant meter assembly includes the meter, backflow preventer, shut-off valves and related fittings. Fire hydrant meter assembly use is allowed only between April 15 and October 15 of each year. The Customer shall protect the fire hydrant meter assembly from freezing. The Customer is responsible for any damage, including vandalism and freezing, to fire hydrants and/or hydrant meters. Only District personnel are permitted to install, move, or disconnect hydrant meters. Customers who attempt to install, move, or disconnect a hydrant meter without District authorization shall be subject to the provisions of Article III, Violator's Liability. Refer to Appendix A, Schedule of Fees and Rates for deposits, rates and fees related to fire hydrant meter assemblies.

### 6.8.11 Efficient and Beneficial Water Use

Because water is a limited resource, all Customers of the District shall use water efficiently and only for beneficial purposes in order that the District can continue to assure an adequate water supply to protect the public health, safety and welfare. Customers using water from a source other than the District's Water System for outdoor uses such as landscape watering are encouraged to follow these requirements for Efficient and Beneficial Water Use.

### 6.8.12 No Wasteful Water Use

Water shall be used only for beneficial purposes and shall not be wasted. Any instance of flagrant runoff or other waste of water shall be considered a violation of these Rules and Regulations.

### 6.8.13 Irrigation and Outdoor Use Regulations-General

Water for irrigation of lawns, landscaping and other outdoor uses (e.g., car washing, outdoor wash-downs, etc.) shall be used pursuant to these Rules and Regulations. Nothing herein shall prevent the imposition of a total ban on outdoor water use in the event of a water supply emergency, or the creation of additional regulations to meet specific Water System or water supply conditions.

(a) Irrigation or other outdoor uses of water shall occur before ~~10~~8:00 a.m. or after ~~4~~6:00 p.m.

(b) Customers with even-numbered addresses may use water for irrigation and other outdoor uses on Sundays, Wednesdays, and Fridays.

(c) Customers with odd-numbered addresses may use water for irrigation and other outdoor uses on Tuesdays, Thursdays, and Saturdays.

(d) No irrigation or other outdoor water uses are permitted on Mondays.

(e) No irrigation or other outdoor water use shall be permitted at any time through a free-running hose without a nozzle or sprinkler attached.

### 6.8.14 Irrigation Permits

Irrigation Permits are required and are available from the District that allows consecutive-day irrigation for specific needs. Such needs are limited to circumstances under which a Customer needs to apply water more frequently than allowed by these regulations and restrictions to establish new landscape plantings. Requests shall be made at least two (2) business days before the permit is needed. However, no irrigation use shall occur between the hours of ~~10~~8:00 a.m. and ~~4~~6:00 p.m. and irrigation is not allowed on Mondays. Irrigation Permits may be requested for the following specific needs:

(a) For newly planted sod and/or newly-planted trees and gardens, irrigation may occur each day for a period not exceeding 14 consecutive days (excluding Mondays), or for watering newly-seeded lawns each day for a period not exceeding 28 consecutive days (excluding Mondays).

(b) For daily watering of outdoor stock at nurseries, greenhouses, and stores.

Violation of the terms of an Irrigation Permit will be cause for immediate revocation of the permit. The District shall have authority to interpret, apply, and enforce these Rules and Regulations to prevent undue commercial or business hardship, and may issue other Irrigation Permits in furtherance of this authority.

### 6.8.15 Use Restrictions – Water Supply Emergencies

**RULES AND REGULATIONS**
**FOR**
**WATER AND WASTEWATER SERVICE**

EAGLE RIVER
WATER & SANITATION
DISTRICT

# APPENDIX B

## WATER AND WASTEWATER SERVICE CONSTRUCTION SPECIFICATIONS

Last Approved Revision: February 24, 2022

SECTION I – GENERAL

### 1.4 Purpose

These Water and Wastewater Service Construction Specifications are intended to ensure that the Services extended from the Water System and Wastewater System is constructed so as to not adversely impact the Water System or Wastewater System. The extent of Water Service and Wastewater Service is as defined in the Rules and Regulations, Article II, 2.122 and 2.117, respectively.

### 1.5 Authorization to Connect

This Appendix provides construction specifications, including testing and inspection requirements related to Services, but does not include all of the requirements for Connection to the Water and/or Wastewater Systems. Customers intending to make a Connection must contact the District prior to any construction or work on the Water Service or Wastewater Service so that all requirements for Connection can be determined. A complete description of the requirements for Connection can be found in these Rules and Regulations, refer to Article IV, Authorization to Connect to Water and Wastewater Systems.

Customers must submit a completed Connection Application (available at www.erwsd.org), a completed service line and meter sizing form and a site plan outlining the following items for both water and wastewater service lines.

- Pipe Materials
- Pipe Sizes
- Depths of Bury
- Curb stop location
- Proposed main line tie in locations
- Utility crossings identified and mitigated by proper separation or by secondary containment.
- Tracer wire installation plan as outlined in Appendix E.
- Meter pit plan submittal (if applicable).

Water service lines must be sized appropriately, and velocities for maximum domestic use must be under 10fps. Under no circumstance may the water service line from the water main to the meter be sized smaller than the meter.

### 1.6 Services and Meters

Each separately metered unit shall have a separate and independent Water and Wastewater Service Connection to the Main. Along with the Connection Application, The customer shall submit a schematic/diagram for the mechanical room or location where the meter assembly for domestic use, irrigation use and the fire suppression system are to be installed. This diagram should demonstrate conformance to the Rules

Service Mains and Their Appurtenances, and local fire authority requirements. All installation work shall be performed by a contractor holding a State of Colorado Division of Fire Prevention and Control certification for underground fire line installation. Commercial Water Service connections for fire suppression systems shall be as required by the local fire authority. Residential connection of the fire suppression system to the Water Service shall occur downstream from the Curb Stop valve and upstream of the meter. Refer to Detail B-05.

## 2.10 Connections, Testing and Requirements for Inspection

### 2.10.1 Water Service Connections

*Service Lines smaller than four inches (4"):*

All Water Service connections of 1", 1.5"- and 2-inch diameter shall be made only by District personnel using a tapping saddle fitting on existing mains.

*Service lines four inches (4") or larger in diameter:*

Water Service Connections 4 inch (4") in diameter or greater shall be made by a qualified contractor on behalf of the Customer and witnessed and inspected by a District Inspector. For all connections 4" in diameter and larger, a tee shall be installed on the main or a wet tap may be made using a tapping sleeve with prior approval from the District. The tapping sleeve shall be stainless steel Mueller H304 (250 psi working pressure) or approved equivalent. The use of a tapping sleeve shall meet the following conditions:

(a) Tapping sleeve must be approved by the District prior to installation and may only be installed by an approved contractor.

(b) System working pressures shall not exceed the tapping sleeve's rated working pressure.

(c) Tapping sleeves shall not be permitted for service lines with a diameter that is equal to or greater than one-half (½) the diameter of the main being tapped.

(d) Tapping sleeves shall not be permitted for service connections larger than 6" in diameter. A tee shall be installed on the Water Main.

### 2.10.2 Water Service Testing

*Service Lines smaller than four inches (4"):*

No disinfection is required on service lines smaller than 4". Hydrostatic testing of the service line shall use system pressure. The contractor shall backfill the trench at their

own risk. Pressure is held for a minimum of two hours and will be accepted if no leaks are measured or observed. If the test fails, the service line will need to be repaired or replaced. In winter conditions, compressed air to 50 psi may be used for testing at the discretion of the District Inspector. Verification required to ensure that pressure has been holding for at least two (2) hours (time stamped photos are acceptable).

*Service lines four inches (4") or larger in diameter:*

The District Inspector will perform high chlorine, low chlorine, bacteriologic, and hydrostatic testing on the Service, similar to a water main. Details of the testing procedures can be found in Appendix C, Section 5. Customer shall provide a minimum of two days advance notice to schedule testing. The testing process typically requires a minimum five-day duration before water service can be turned on. Failure to pass these tests will result in the Customer flushing the Service and the District retesting the Service.

### 2.10.3 Water Service Requirements for Inspection

No Services shall be covered with bedding material or backfill without the District Inspector's approval. All portions of the Water Service must be visible to the District Inspector for an inspection to be completed.

District personnel must attend all underground Fire Protection Service flush tests in order to operate Curb Stop valves. All water service ends shall be capped or covered with a mechanical cap after flush tests until meter assembly installation as required by the local fire authority.

The District shall be notified a minimum of two business days prior to testing.

Customers requesting Connections after November 15 and before April 15 must provide heating, adequate to prevent freezing of water, in the Connecting area.

## 2.11 Water Service Line Abandonment

For abandonment of 2-inch and smaller water service lines or stub outs, the corporation stop must be shut off at the water main and the line disconnected. For abandonment of 4-inch or larger water service lines or stub outs, a mainline shutdown must be coordinated, the curb stop valve and lateral will be removed, and a MJ flange orplug installed on the main line tee. Alternatively, a solid sleeve on the mainline is an acceptable abandonment method. All water service line abandonments must be inspected by a District Inspector prior to backfill.

## 2.13 Stop and Waste Valves

Stop and waste valves are prohibited.

## 2.14 Meter Pits

Meter pits shall be adequately sized to contain the meter assembly and allow for maintenance of the assembly. Meters will be required to be installed in a precast concrete manhole with an overall depth of no less than 84 inches.

Meter pits shall be installed at the property line or the edge of easement, and downstream of the Curb Stop valve. A 5' high 4" x 4" post shall be provided for the Radio Transmitter Unit. A 3-strand wire provided by the District shall be run from the meter to the top of the post. A ½-inch galvanized rigid conduit 24" in length shall be installed on the bottom of the post to protect the wire a minimum of 18" up from ground level. Refer to Detail B-06 and B-07.

Temporary meter pits must be ~~will need to be~~ completely removed after construction and repairs to the water service line made per Appendix B-2.15

### 2.14.1 Manhole Bases

Precast concrete, ASTM C478, minimum 48-inch diameter or District approved alternative.

### 2.14.2 Manhole Sections

Precast concrete, ASTM C478, with the inside lip higher than the outside lip, minimum 48-inch diameter or District approved alternative. Concrete cone sections shall be eccentric.

### 2.14.3 Manhole Rings and Covers

For installations located in public rights of way manhole rings and covers shall be cast iron, ASTM A48, with a flat lid with the lettering "WATER" cast on the cover. Ring and cover combined weight shall be greater than 255 pounds and machined to fit securely with a non-rocking cover. Lid shall be waffle patterned, and able to withstand HS-20 traffic loading.

### 2.14.4 Manhole Steps

For concrete manholes only, non-skid steps shall be installed capable of carrying a load of 1,000 pounds, installed six (6) inches from the face of the manhole. The steps shall conform to ASTM C478 and be plastic coated.

## 3.8 Connections, and Requirements for Inspection

### 3.8.1 Wastewater Service Connections

The connection of the Wastewater Service to the Wastewater Main shall be made as follows:

(a) A factory wye shall be installed on all new mainline installations for service line stub outs on gravity mains. The wye shall be located no closer than ten (10) feet from a manhole. A saddle tap, provided by the District, shall be used on new service line connections to existing mainlines. All service connections shall be above spring line.

~~(b)~~ On four inch (4") or six inch (6") diameter new service connections to existing mains, a saddle connection is required. The saddle connection shall be located no closer than ten (10) feet from a manhole. The flow line of the Service pipe shall enter the Main above the spring line of the Main. Connections into manholes are prohibited. All Connections up to six (6) inches in diameter shall be made by District personnel, and 48 hours prior notice is required to confirm saddle availability, and confirmation of existing sewer main material. ~~.~~

~~(c)~~(b) If the Service pipe is eight (8) inches or greater in diameter, the connection shall be made into an existing manhole or into a new manhole placed on the existing Main. Connections eight (8) inches or greater in diameter shall be made by a qualified contractor on behalf of the Customer and witnessed and inspected by a District Inspector.

### 3.8.2 Wastewater Service Requirements for Inspection

No Services shall be covered with bedding material or backfill without the District Inspector's approval. All portions of the Wastewater Service must be visible to the District Inspector for an inspection to be completed.

## 3.9 Stub Out or Service Line Abandonment

If a Stub Out or existing service pre-exists on a property and will not be utilized by the Customer, the Stub Out must be abandoned by the Customer by one of the following methods:

1. The Customer shall cut and cap the service at the main. The abandonment shall be inspected by the District prior to backfill. The use of a Stub Out for Connection to the Wastewater Main must be approved by the District.

2. The Customer shall cut and cap the service at the property line and abandon the stub out at the main with a Cured-In-Place Pipe Point Patch (CIPP-PP). The

**RULES AND REGULATIONS**

**FOR**

**WATER AND WASTEWATER SERVICE**

EAGLE RIVER
WATER & SANITATION
DISTRICT

# APPENDIX C

## STANDARD SPECIFICATIONS FOR WATER MAINS

Last Approved Revision: February 24, 2022

All main extensions shall be installed at a minimum distance of ten feet (10') from all structures or at a one foot horizontal to one-foot vertical (1:1) ratio from the bottom of any structural element, whichever is greater. Encroachments of structures into easements are discouraged and shall only be allowed by written authorization from the District.

#### 2.6.16 Encased Piping

If required by the District, CDPHE regulations, or other governing body, water mains may need to be installed in a casing pipe. Refer to Appendix D, 2.6 ~~Appendix D, 2.5.3~~for pipe crossings.

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Materials and installation of water mains in casing pipes shall be in conformance with Section 3.8.

### 2.7 Operating Pressures

Water system materials shall be specified for an operating pressure of 250 psi. The distribution system shall be designed such that the minimum operating pressure at any tap shall be 60 psi and the maximum operating pressure shall not exceed 190 psi.

### 2.8 Protection of Potable Water Supplies

Please refer to Appendix D, Section 2.6 for design criteria relative to water main installation in proximity to sanitary sewer infrastructure.

Steep Slope Applications

Slopes with greater than 20% grade require the use of with Anchor Blocks/Cutoff Collars in conjunction with restrained joints. If specifying internally restrained joints: The Joints shall be extended after assembly to minimize joint take-up in test and /or in service. This shall be accomplished by pulling or jacking the spigot away from the socket until firm resistance is encountered. See Detail C-10

## SECTION III – MATERIAL SPECIFICATIONS

### 3.1 General Requirements

All materials shall conform to the District's Specifications. Material substitutions may be considered on a case-by-case basis. Written approval is required prior to furnishing. Applicant must submit shop drawings and specifications for substituted materials considered ‘or equal’ for review and approval prior to the preconstruction conference. A bill of materials shall be furnished to the District Inspector at the preconstruction conference.

All materials utilized shall be new and undamaged. Everything necessary to complete all installations shall be in accordance with the Specifications and all installations shall be completed as fully operable functioning parts of the District's system. Acceptance of materials, or the waiving of inspection thereof, shall in no way relieve the Applicant of the responsibility for furnishing materials meeting the requirements of the Specifications.

### 3.2 Pipe and Fittings

**RULES AND REGULATIONS**
**FOR**
**WATER AND WASTEWATER SERVICE**

EAGLE RIVER
WATER & SANITATION
DISTRICT

# APPENDIX D

## STANDARD SPECIFICATIONS FOR SEWER MAINS

Last Approved Revision: February 25,2021

2. Manning's Equation; unless conditions require or are best addressed with other methods referenced in MOP FD-5.
3. CDPHE-State of Colorado Design Criteria for Domestic Wastewater Treatment Works. (CDC-DWTW)

Peak design flow rates shall be reported, based on average per SFE wastewater generation rates, a peaking factor, and shall include flow from inflow and infiltration (I&I). The minimum wastewater generation rate shall be 195 gpday/SFE inclusive of I&I. Alternative design standards for wastewater generation by development type that are submitted with documentation will be considered by the District on a case by case basis. Hydraulic design parameters shall be documented in the BDR including:

1. Hydraulic design shall be based upon a Manning's Formula, using a Roughness Coefficient or 'n' value of 0.013.
2. Wherever possible, a~~A~~ll mains shall be designed to give mean velocities, ~~when at~~when at average annual daily flow, of not less than two feet per second (2 fps) to insure self-cleaning, and maximum velocities of not more than ten feet per second (10 fps). While minimum velocities are priority, where the minimum is unobtainable due to site constraints, reference table D-1 for minimum slopes that may be allowed at District's discretion.
3. Peaking Factor per CDC-DWTW guidance pdf Figure 3.1
4. Initial operating conditions may not provide for conditions to attain a flow velocity of 2 fps at annual average daily flow. In this case, the flow velocity at peak hour flow must be analyzed. If the initial peak hour flow velocity is 2 fps or greater, the minimum flow velocity criteria is satisfied.

If initial operating conditions do not provide for conformance with the minimum flow velocity criteria at average daily flow or peak hour flow, written acknowledgement shall be provided to the ERWSD. Design conditions shall provide for maximum depth of flow at peak hour flow rate of no more than 80 percent of the internal pipe diameter (i.e., d/D). Full pipe design conditions shall not be allowed, except for siphons which require full pipe flow. The District reserves the right to request oversized mains to provide service for projected future needs. The additional cost for the oversizing may be negotiated between the District and the Applicant and will be reviewed on a case-by-case basis.

## 2.4 Layout of the Collection System

### 2.4.1 Easement Width Requirements for Main Installations

All mains shall be installed in dedicated public street rights-of-way, when ROW installation is not possible, a~~or~~ dedicated sewer line easement~~s~~ will be required. The installation of Public Wastewater facilities on developable lots or tracts intended for

private use should be avoided to the extent practicable. The standard easement width for all mains shall be a minimum of 20 feet. The main shall be generally centered within the easement. The easement width shall be in accordance with Standard Detail D-09.

### 2.4.2 Minimum Size

All mains shall be a minimum of eight inches (8") in diameter. All sewer service lines shall be a minimum of four inches (4") in diameter, Refer to Appendix B for Wastewater Service Line Construction Specifications.

### 2.4.3 Depth of Bury

In general, mains are to be sufficiently deep to receive wastewater from basements and to prevent freezing. The minimum cover above a main shall be four feet six inches (4'-6"). For every foot of cover that is out of compliance with minimum cover requirements, the District will require the installation of 1-inch of insulation board per Appendix E Section 1.14. In addition to maintaining cover from the ground surface, specified cover is required from storm sewer crossings and other cold air sources. Additional depth may be required to allow for adequate cover on service lines. The Applicant shall demonstrate that the pipe materials are suitable for the proposed depth of installation. Any main installation greater than ten feet (10') shall require an increased wall thickness. Any proposed main installation greater than 14 feet (14') shall require an alternatives analysis submittal and District approval.

The maximum depth for a sewer manhole is fourteen feet (14') and shall be measured from the top of rim to the downstream invert. Any proposed applications with manholes installed at a depth greater than fourteen feet (14') shall require an alternatives analysis submittal and District approval.

### 2.4.4 Main Insulation Requirements

For every foot of cover that is out of compliance with minimum cover requirements, the District will require the installation of 1-inch of insulation board per Appendix E Section 1.14. In addition to maintaining cover from the ground surface, specified cover is required from storm sewer crossings and other cold air sources.

### 2.4.5 Minimum Distance from Structures

All main extensions shall be installed at a minimum distance of ten feet (10') from all structures or at a one foot horizontal to one foot vertical (1:1) ratio from the bottom of any structural element, whichever is greater. Encroachments of structures into easements are discouraged and shall only be allowed by written authorization from the District.

| | | |
|---|---|---|
| 24 inches | 0.08 | 1.50 |
| 27 inches | 0.067 | 1.29 |
| 30 inches | 0.058 | 1.11 |
| 33 inches | 0.052 | 0.98 |
| 36 inches | 0.046 | 0.87 |
| 39 inches | 0.041 | 0.79 |
| 42 inches | 0.037 | 0.71 |

### 2.5.3 Slope between Manholes

A continuous slope shall be maintained on main installations between manholes. Manholes are required at every slope change of the main.

### 2.5.4 Steep Slope Applications

Steep slope applications with mains longer than 100 feet (100') are required to install a bar screen manhole at the top of the slope per Detail D-03. Grade breaks shall not be permitted in manholes in excess of ten percent (10%) at the bottom of steep slope applications. Mains shall be anchored securely to the manhole and installed with restrained joint connections per Detail D-04. Sewer mains with slopes of twenty percent (20%) or greater shall require restrained joints to be designed by the Engineer.

### 2.5.5 Slope across Manholes

The minimum fall across a standard manhole shall be two-tenths of a foot (0.2'). The hydraulic grade line and energy grade line of flow in a manhole shall be designed to stay below the crown of the pipe.

### 2.5.6 Main Line Horizontal Alignment

All mains shall be installed with a straight horizontal alignment between manholes.

### 2.5.7 Length of Mains and Slope Measurement

Length of mains shall be measured horizontally, from the center of manhole structure to the center of the manhole structure, not the center of the manhole lid. Main slopes shall be calculated using the outside invert of the upstream manhole to the outside invert of the downstream manhole. These length and slope calculations shall be used for construction submittals as well as for the Drawings of Record submittal.

### 2.5.8 Manholes

Manholes shall be installed at the following locations:

(a) The end of each main
(b) All changes in grade, size, horizontal or vertical alignment
(c) Sanitary sewer manholes shall be aligned and spaced so that the change of flow direction is not at an acute angle.
(d) All intersections
(e) Main distances not greater than four-hundred feet (400')
(f) Manhole lids shall be located outside of the vehicle wheel path on all road installations

Manholes shall not be located in the following areas:

(a) Within ten feet (10') of domestic water infrastructure
(b) Where surface water can accumulate (i.e. drainage pans, ditches, floodplains, etc.)
(c) Within a 100-year floodplain

The manhole access opening shall be a minimum of twenty four inches (24") in diameter and any sewer mains over eighteen inches (18") shall have thirty-six (36") diameter manhole access openings. The minimum manhole diameter size shall be based on the largest main penetrating the manhole and adhere to the following:

**Table D-2: Manhole Sizing Criteria**

| Main Diameter | Minimum Manhole Diameter |
|---|---|
| 8 to 18 inches | 48-inch |
| 21 to 27 inches | 60-inch |
| 30 inches and above | 72-inch |

Bar screen manholes may be required in new developments to prevent construction debris from entering the collection system. Bar screen manholes shall be required in steep slope applications. Refer to Detail D-03.

Inside Drop manholes shall not be permitted and outside drop manholes will be considered on a case-by-case basis. If a drop manhole is approved, it shall be provided for where a main enters a manhole twenty-four inches (24") or more above the manhole invert. Refer to Standard Detail D-02.

### 2.5.9 Manhole Clearances

Manholes must be exposed and accessible at all times. A minimum clearance of three (3) feet from the rim of the manhole to the face of any surface obstruction object must

or come into contact with any part of a sewer main or manhole. There shall be no physical connections between a stormwater conveyance system and a main or appurtenance thereto which would permit the passage of any storm water into the wastewater collection system. No stormwater water pipe shall pass through or come into contact with any part of a sewer main or manhole.

### 2.6.2 Relation to Water Works Structures

Minimum distances from public water supply wells or other water supply sources and structures shall be provided.

### 2.6.3 Horizontal and Vertical Separation from Potable Water Mains

Refer to detail D-11.

*(a) Parallel Main Installations and Appurtenances:*

Sewer mains and sewer service lines shall be installed at least ten feet (10') horizontally from any existing or proposed water main. The distance shall be measured edge to edge. In cases where it is not practical to maintain a ten foot (10') separation, the District may allow installation of the sewer main closer to a water main utilizing encasement or pressure rated joints, provided that the water main is on a separate trench or on an undisturbed earth shelf located on one side of the main and at an elevation so the bottom of the water main is at least eighteen inches (18") above the top of the sewer main. The District requires a ten-foot (10') separation between water and sewer appurtenances including manholes. If a manhole is installed, it will be measured from outside of manhole to outside of water attribute.

*(b) Perpendicular Crossings – Sewer under Water:*

If the sewer pipe crosses under the water main but less than eighteen inches (18") of clear space will exist, either the water main or sewer main must be installed with secondary containment. Acceptable options include a pipe casing extending no less than nine feet (9') each side of the crossing. The pipe casing shall be of watertight material with no joints. The casing pipe materials may be steel, ductile iron, fiberglass, fiberglass reinforced polymer mortar (FRPM), or polyvinylchloride (PVC) with suitable carrier pipe supports and casing pipe end seals. Alternatively, concrete or Controlled Low Strength Material (ex. flowable fill) encasement of either pipe extending no less than ten-feet (10') each side of the crossing may be used. To the extent possible, sewer must be encased as the first option.

*(c) Perpendicular Crossings – Water under Sewer:*

The remaining pre-cast sections shall be placed and aligned to provide vertical sides and alignment of the ladder rungs. Plumbness shall be checked as each barrel section is added. A bitumastic or other approved sealer shall be placed between pre-cast sections so that the completed manhole is rigid and watertight. The sealer shall be placed both on the inside lip as well as the outside lip of each section.

#### 3.3.11 Interior Coatings

For drop manholes (or other applications as identified by the District), manhole interiors shall be coated with a Polyamidoamine Epoxy Primer with Polyamidoamine Epoxy Top Coat such as Tnemec Epoxoline Series L69 or equivalent. Preparation and application shall be per manufacturers' recommendations and installed by a qualified applicator. All manhole coatings are subject to inspection by a 3rd party coatings inspector.

### 3.4 Concrete/Grout

#### 3.4.1 General Requirements

Contractor shall provide the District Inspector with a specification sheet or mix design from the concrete supplier.

#### 3.4.2 Concrete

All concrete used in construction of cast-in-place manholes and bases shall be CDOT Class D. Construction shall be in conformance with the Detail D-01.

#### 3.4.3 Mortar and Grout

Non-shrink mortar and grout used in the shaping of inverts, grade ring gaps, sealing penetrations, or setting and anchoring cast iron shall consist of one part Type II Portland Cement and two parts of fine, clean sand. Only sufficient water shall be added to provide a stiff, workable cement mixture for proper troweling. Hydrate lime or masonry cement shall not be used. Where relatively thin portions of grout are to be applied (to a flow channel or top of bench) an approved epoxy bonding coat shall be applied to the exposed concrete surfaces prior to grouting.

### 3.5 Locating Disk

The District will provide green 3M brand Full-Range Disk Marker locating disks to the contractor for stub outs. The contractor shall ensure their correct installation.

### 3.6 Marking Tape

The installation of green marking tape is required on all sewer mains and service lines. The tape shall be installed approximately 24 inches (24") above the main or line. The tape shall meet the following specifications:

**Table D-4: Minimum Time for a 0.5 psig Pressure Drop for Size and Length of Pipe for Q = 0.0015**

| Pipe Diameter, in. | Minimum Time, min:s | Length for Minimum Time, ft | Time for Longer Length, s | Specification Time for Length (L) Shown, min:s | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 100 ft | 150 ft | 200 ft | 250 ft | 300 ft | 350 ft | 400 ft | 450 ft |
| 4 | 1:53 | 597 | 0.190 L | 1:53 | 1:53 | 1:53 | 1:53 | 1:53 | 1:53 | 1:53 | 1:53 |
| 6 | 2:50 | 398 | 0.427 L | 2:50 | 2:50 | 2:50 | 2:50 | 2:50 | 2:50 | 2:51 | 3:12 |
| 8 | 3:47 | 298 | 0.760 L | 3:47 | 3:47 | 3:47 | 3:47 | 3:48 | 4:26 | 5:04 | 5:42 |
| 10 | 4:43 | 239 | 1.187 L | 4:43 | 4:43 | 4:43 | 4:57 | 5:56 | 6:55 | 7:54 | 8:54 |
| 12 | 5:40 | 199 | 1.709 L | 5:40 | 5:40 | 5:42 | 7:08 | 8:33 | 9:58 | 11:24 | 12:50 |
| 15 | 7:05 | 159 | 2.671 L | 7:05 | 7:05 | 8:54 | 11:08 | 13:21 | 15:35 | 17:48 | 20:02 |
| 18 | 8:30 | 133 | 3.846 L | 8:30 | 9:37 | 12:49 | 16:01 | 19:14 | 22:26 | 25:38 | 28:51 |
| 21 | 9:55 | 114 | 5.235 L | 9:55 | 13:05 | 17:27 | 21:49 | 26:11 | 30:32 | 34:54 | 39:16 |
| 24 | 11:20 | 99 | 6.837 L | 11:24 | 17:57 | 22:48 | 28:30 | 34:11 | 39:53 | 45:35 | 51:17 |
| 27 | 12:45 | 88 | 8.653 L | 14:25 | 21:38 | 28:51 | 36:04 | 43:16 | 50:30 | 57:42 | 64:54 |
| 30 | 14:10 | 80 | 10.683 L | 17:48 | 26:43 | 35:37 | 44:31 | 53:25 | 62:19 | 71:13 | 80:07 |

NOTE 1—Consult with pipe and appurtenance manufacturer for maximum test pressure for pipe size greater than 30 in. in diameter.

### 5.3 Manhole Testing – General Requirements

Manhole vacuum testing shall be required by the District on all ~~manholes~~manholes ~~in all areas of high groundwater~~ via the vacuum test per ASTM C1244, “Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum)” prior to backfill.

#### 5.3.1 Manhole Testing Procedure

(a) Plug all inlets and outlets.

(b) Install the vacuum tester head assembly on the manhole.

(c) Attach the vacuum pump assembly to the proper connection on the test head assembly. Make sure the vacuum inlet/outlet valve is in the closed position.

(d) Inflate the sealing element to twice the test pressure to be used. Do not over inflate.

(e) Start the vacuum pump assembly engine and allow preset RPMs to stabilize.

(f) Open the inlet/outlet ball valve and evacuate the manhole to ten-inch (10") Hg (mercury) that is equivalent to approximately 5 PSIG (0.3 bar) backpressure.

(g) Close the vacuum inlet/outlet ball valve, disconnect the vacuum pump and monitor the vacuum for one (1) minute.

(h) Allowable leakage - less than one-inch (1") Mercury (Hg) in one (1) minute.

(i) All manholes that do not meet the minimum amount for the leakage rests must be repaired and re-tested.

# RULES AND REGULATIONS
# FOR
# WATER AND WASTEWATER SERVICE


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# APPENDIX E

## EARTHWORK AND CONSTRUCTION SPECIFICATIONS

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Last Approved Revision: February 25, 2021

Clay barriers may be required where groundwater is encountered, anticipated or by the direction of the Engineer. Refer to Appendix C and Appendix D for groundwater barrier application in Water and Sewer main construction, respectively.

## 1.12 Tracer Wire

### 1.12.1 Materials

*General*

Tracer wire shall be installed with all buried main and service pipelines in the water and wastewater system. The Applicant shall submit plans for a complete tracer wire system for all projects.

All tracer wire shall have HDPE insulation intended for direct bury, color coded per American Public Works Association (APWA) standard for the specific utility being marked. Wire insulation for potable water will be colored **blue** and wire insulation for wastewater will be colored **green.** Wire insulation for the lead from the grounding anode will be colored **red.**

*Open Trench* - Tracer wire shall be #12 AWG Copper Clad Steel, or Solid Copper, High Strength with minimum 300 lb. break load, with minimum 30 mil HDPE insulation thickness.

*Directional Drilling/Boring* - Tracer wire shall be #12 AWG Copper Clad Steel, Extra High Strength with minimum 1,150 lb. break load, with minimum 30 mil HDPE insulation thickness.

*Pipe Bursting/Slip Lining* - Tracer wire shall be 7 x 7 Stranded Copper Clad Steel, Extreme Strength with 4,700 lb. break load, with minimum 50 mil HDPE insulation thickness.

Approved Manufacturer: Copperhead Industries, Pro Line Safety Products, or approved equal.

*Connectors*

All mainline tracer wire must be interconnected in intersections, at mainline tees and mainline crosses. At tees, the three wires shall be joined using a single 3-way lockable connector. At Crosses, the four wires shall be joined using a 4-way connector. Use of two 3-way connectors with a short jumper wire between them is an acceptable alternative.

Direct bury wire connectors – shall include 3-way lockable connectors and mainline to lateral lug connectors specifically manufactured for use in underground tracer wire installation. Connectors shall be dielectric silicone filled to seal out moisture and

corrosion, and shall be installed in a manner so as to prevent any uninsulated wire exposure.

Non locking friction fit, twist on or taped connectors are prohibited.

Approved Manufacturers: ~~Burndy Split Bold Connector, copper to copper, square head with King Innovation Split Bolt Aqua Housing 69105 or~~ Copperhead Industries Snakebite Connector, King Innovation Split-Bolt Utility Line Direct Bury or approved equals.

*Termination/ Access*

All tracer wire termination points at water service curb stops and sewer service cleanouts must utilize an approved tracer wire access box (above ground access box or grade level/in-ground access box as applicable), specifically manufactured for this purpose as specified below for the type of pipeline.

All grade level/in-ground access boxes shall be appropriately identified with “sewer” or “water” cast into the cap and be color coded.

A minimum of two (2) feet of service loop wire is required in all tracer wire access boxes after meeting final elevation.

All tracer wire access boxes must include a manually interruptible conductive/connective link between the terminal(s) for the tracer wire connection ~~and the terminal for the grounding anode wire connection~~.

If required, ~~G~~grounding anode wire shall be connected to the identified (or bottom) terminal on all access boxes.

*Grounding*

Tracer wire must be properly grounded at all dead ends/stubs and at all connection points to existing systems without tracer wire. Stripe tracer wire and make three (3) secure wraps around the existing main~~2’-3' long loop secured to the pipe at the termination point.~~

~~Grounding of tracer wire shall be achieved by use of a drive-in magnesium grounding anode rod with a minimum of 20 feet of #12 red HDPE insulated copper clad steel or solid copper wire connected to anode (minimum 1 lb.) specifically manufactured for this purpose, and buried at the same elevation as the utility.~~

~~When grounding the tracer wire at dead ends/stubs, the grounding anode shall be installed in a direction 180 degrees opposite of the tracer wire, at the maximum possible distance.~~

~~Where the anode wire will be connected to a tracer wire access box, a minimum of two (2) feet of service loop is required after meeting final elevation.~~

### 1.12.2 Installation

*General*

Tracer wire installation shall be performed in such a manner that allows proper access for connection of line tracing equipment, proper locating of wire without loss or deterioration of low frequency (512Hz) signal for distances in excess of 1,000 linear feet, and without distortion of signal caused by multiple wires being installed in close proximity to one another.

Tracer wire systems must be installed as a single continuous wire, except where using approved connectors. No looping or coiling of wire is allowed.

Any damage occurring during installation of the tracer wire must be immediately repaired by removing the damaged wire, and installing a new section of wire with approved connectors. Taping and/or spray coating are prohibited.

Tracer wire shall be installed at the top half of the pipe and secured (taped/tied) at five (5) feet intervals.

Tracer wire must be properly grounded as specified.

At all water and wastewater mainline dead-ends, and at water service line curb stops and wastewater service line cleanouts closest to the property being served, tracer wire shall go to ground using looping ~~using an approved connection to a drive-in magnesium grounding anode rod, buried at the same depth as the service.~~ (See Grounding)

If no mainline tracer wire exists at a connection point, mainline trace wire shall not be connected to existing conductive pipes. Treat as a mainline dead end, ground using an~~looping,~~ three (3) complete wraps around the main with stripped tracer wire. (see G~~g~~rounding) ~~approved waterproof connection to a grounding anode buried at the same depth as the main.~~

All service lateral tracer wire shall be a single wire, connected to the mainline tracer wire using a mainline to lateral lug connector, installed without cutting/splicing the mainline tracer wire.

In occurrences where an existing tracer wire is encountered on an existing utility that is being extended or tied into, the new tracer wire and existing tracer wire shall be connected using approved splice connectors.

*Sanitary Sewer System*

A mainline tracer wire must be installed, with all service lateral tracer wire properly connected to the mainline tracer wire, to ensure full tracing/locating capabilities from a single connection point.

Lay mainline tracer wire continuously, by-passing around the outside of manholes/structures on the North or East side. Manholes/structures shall have a locating wire connected to the mainline tracer wire and brought up the outside of the structure and installed through a notch cut at the top of the precast cone section, beneath the lid, protected with Ram-Nek material. Wire shall be left with a minimum two (2) foot service loop.

~~A grounding anode shall be installed at all dead end mainline manholes~~. The mainline tracer wire and the grounding anode lead wire shall be installed up the manhole barrel section. Access to the wire will be provided by cutting a small notch in the top of the manhole cone section and protecting the wire with Ram-Nek material. A minimum of two (2) foot service loop will be provided in each manhole.

Tracer wire on all sewer service laterals shall~~must~~ terminate at the structure being served with a Copperhead Industires Cobra Access Point mounted to the structure or on a Cobra Mounting Stake within two (2) feet of the structure.~~at the structure being served with a Copperhead Industries Cobra Access Point, mounted to the structure or on a Cobra Mounting Stake within 2 feet of the structure. at an approved tracer wire access box color coded green and located directly adjacent to the sewer service cleanout closest to the structure being served. A grounding anode shall be installed beneath the cleanout at the depth of the service.~~

Access Box Approved Manufacturer: Copperhead Industries Snake-Pit or approved equal.

*Water System*

A mainline tracer wire must be installed, with all service lateral tracer wire properly connected to the mainline tracer wire, to ensure full tracing/locating capabilities from a single connection point.

Lay mainline tracer wire continuously, by-passing around the outside of valves and fittings on the North or East side. Water system valves shall have a tracer wire connected to the mainline tracer wire and brought up the outside of the valve box and inserted into the valve box with a minimum of two (2) feet of spare wire.

Tracer wire on all water service laterals must daylight at an approved tracer wire access box color coded blue and located adjacent to the curb stop ~~A grounding anode shall be installed at the curb stop location at the depth of the service.~~ Refer to detail B-07.

Access box approved manufacturer: Copperhead Industries Snake-Pit or approved equal.

Hydrants – Tracer wire must terminate at an approved above-ground tracer wire access box, properly affixed to the hydrant grade flange. (Affixing with tape or plastic ties shall not be acceptable). Approved manufacturer: Copperhead Cobra Access point with hydrant flange package.

Tracer wire on all water service lines shall terminate at the structure being served with a Copperhead Industries Cobra Access Point, mounted to the structure or on a Cobra Mounting Stake within two (2) feet of the structure.~~FH approved above-ground tracer wire access box.~~ ~~buried grounding anode beneath the service line at the building foundation or other entry point.~~

All conductive and non-conductive service lines shall include tracer wire.

*Prohibited Products and Methods*

The following products and methods shall not be allowed or acceptable

- Uninsulated tracer wire
- Stranded copper wire in all applications
- Tracer wire insulations other than HDPE
- Non locking, friction fit, twist on or taped connectors
- Brass or copper ground rods
- Wire connections utilizing taping or spray-on waterproofing
- Looped wire or continuous wire installations, that has multiple wires laid side-by-side or in close proximity to one another
- Tracer wire wrapped around the corresponding utility
- Brass fittings with tracer wire connection lugs
- Connecting tracer wire to existing conductive utilities

### 1.12.3 Testing

All new mainline tracer wire installations shall be located by the applicant using typical low frequency (512Hz) line tracing equipment, witnessed by the inspector, contractor, engineer and facility owner as applicable, prior to acceptance of ownership.

This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project.

Continuity testing in lieu of actual line tracing shall not be accepted.

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EAGLE RIVER WATER & SANITATION DISTRICT

UPPER EAGLE REGIONAL WATER AUTHORITY

# BOARD ACTION REQUEST

**TO:** Boards of Directors

**FROM:** Diane Johnson, Communications & Public Affairs Manager

**DATE:** March 23, 2023

**RE:** Board Committees Update

**Summary**: Now is a good time to evaluate board committees and make changes to best meet evolving needs and priorities of the Authority and District. Committees have come and gone over time; changes have been made when the purview of committees no longer align with greater board strategies or when the issues are better handled by the full board(s). A proposed updated committee list is attached for review, with the joint water supply planning committee returning to its original intent and name of water conservation committee. The Authority board has two vacancies on the water conservation committee.

**Background**: The District and Authority bylaws each require a permanent Budget Committee and a permanent Audit Committee. Each board may create standing or special committees, including joint committees, as necessary. The board may add, delete, or change committees (except permanent committees) or adjust membership at any time.

Historically, committees have been comprised of one or two members of each board because all meetings of three or more members at which any public business is discussed is considered an “open meeting” and must meet the requirements of Colorado’s Open Meetings Law (§24-6-404, C.R.S.). These requirements include providing public notice at least twenty-four hours before any meeting. Also, when more than two board members have been interested in a committee, the topic has generally been of interest to all board members, so those discussions have been held during board meetings.

Authority and District boards have consistently implemented a nimble committee structure where committees can meet quickly and efficiently to take a “deep dive” on complex issues, many of which are time-sensitive, and report back to the full board to guide decision-making.

Board committees have changed as the Authority and District have evolved. For example, the Water Conservation committee was renamed the Water Demand Management committee in 2012, and then renamed again to the Water Supply Planning committee in 2021. Committees have been formed to address timely issues such as Ever Vail, Traer Creek tank, and Wilderness Policy. When these issues no longer required dedicated committee work, the committees were dissolved.

We reviewed current committees and found that many of these topics are being addressed by the full board and do not require dedicated committee work at this time. For the proposed updated committees, board members would provide specific recommendations to staff (e.g., water conservation program development) and be a liaison to the full board when items are presented during board meetings.

**Alternatives**: Amend the proposed updated committee list.

**Legal issues**: None.

**Budget implications**: None.

**Recommendations**:

1. Dissolve the District Facilities Master Plan committee, the joint Water Quality and Climate Action Plan committees, and return the joint Water Supply Planning committee to its original intent and name of Water Conservation committee.
2. Approve the updated committee list as presented.
3. Reaffirm members on the updated committees and for the Authority, appoint two members to the Water Conservation committee.

**Suggested motion**: I move to approve the board committee changes as presented.

**Attached supporting documentation**:

- Draft updated board committee list

EAGLE RIVER WATER & SANITATION DISTRICT

UPPER EAGLE REGIONAL WATER AUTHORITY

# BOARD COMMITTEES (PROPOSED)

## DISTRICT

| | |
|---|---|
| *Audit/Budget* | Dick Cleveland<br>Steve Coyer |
| *Employee Housing* | Steve Coyer<br>Dick Cleveland |
| *Retirement Plans* | Bob Warner<br>Siri Roman<br>David Norris |
| *Organizational Development* | Bob Warner<br>Dick Cleveland |

## JOINT

| | |
|---|---|
| *Rules and Regulations* | Kim Bell Williams (A)<br>Bob Warner (D) |
| *Water Conservation* | *Vacant* (A)<br>*Vacant* (A)<br>Kate Burchenal (D)<br>Steve Coyer (D) |

(A) = Authority, (D) = District

## AUTHORITY

| | |
|---|---|
| *Audit/Budget* | Geoff Dreyer<br>George Gregory |

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# UERWA New Development Report

## March 2023

| | | Type of Use | SFEs Proposed | Location | Existing Service Commitment? | Augmentation Requirement | Development Approval Process Step: | Construction Approval Process Step: |
|---|---|---|---|---|---|---|---|---|
| | 140 W Beaver Creek Bvld (Extended Stay) | Residential | 97.5 | Avon | Yes | | N/A | 0. Conceptual |
| | Avon Dual Brand Hotel(Traer Tract J) | Commercial | 85.05 | Traer | Yes | | 6. Ability to Serve Letter | 2. Plan Approval |
| | CMC Student Housing (Phase I & II) | Residential | 72 | Edwards | Yes | | 6. Ability to Serve Letter | 2. Plan Approval |
| | CVC Clubhouse Residences | Residential | 9 | Edwards | Yes | | 6. Ability to Serve Letter | 2. Plan Approval |
| | ECO School District Housing | Residential | 37 | Edwards | Yes | | 6. Ability to Serve Letter | 2. Plan Approval |
| | Edwards River Park PUD | Mixed Use | 440+com | Edwards | No | 70.2 | 3. Cond. Capacity | 0. Conceptual |
| | Fox Hollow Amended PUD | Mixed Use | 108 | Edwards | No | 14 | 6. Ability to Serve Letter | 2. Plan Approval |
| | Frontgate (CO World Resorts) | Mixed Use | 84 | Avon | No | 2.6 | 6. Ability to Serve Letter | 2. Plan Approval |
| | Kudel Parcel | Residential | 4 | Edwards | No | 2.4 | 6. Ability to Serve Letter | 2. Plan Approval |
| | Margaux PUD | Residential | 32 | Edwards | No | 3.56 | 3. Cond. Capacity | 0. Conceptual |
| | Maverik Gas Station | Commercial | 2.6 | Traer | Yes | | 6. Ability to Serve Letter | 2. Plan Approval |
| | McGrady Acres | Residential | 24 | Avon | Yes | | 6. Ability to Serve Letter | 2. Plan Approval |
| | Mountain Hive | Residential | 110.5 | Edwards | No | 14.1 | 2. Water Analysis | 0. Conceptual |
| | NorthStar PUD Amendment | Commercial | TBD | Edwards | No | 3.7 | 6. Ability to Serve Letter | 2. Plan Approval |
| | Prime West | Residential | 241 | Traer | No | | 1. Connection Application | 0. Conceptual |
| | Riverfront Lot 1 | Residential | 53 | Avon | Yes | | N/A | 2. Plan Approval |
| | Riverwalk PUD Amendment | Residential | 18 | Edwards | No | 1.8 | 6. Ability to Serve Letter | N/A |
| | Stolport Restaurant (Traer Tract J) | Commercial | TBD | Traer | Yes | | 6. Ability to Serve Letter | 1. Plan Review |
| | Swift Gulch | Residential | 42 | Avon | Yes | | 1. Connection Application | 0. Conceptual |
| | Tract Y- Metcalf Road | Residential | 53 | Avon | Yes | | 1. Connection Application | 1. Plan Review |
| | Vogelman Parcel (Carwash) | Mixed Use | 1.5 | Edwards | No | 1.1-2.6 | 2. Water Analysis | 1. Plan Review |
| | Warner Building 2 Conversion | Residential | 13.25 | Eagle-Vail | No | 0.07 | 3. Cond. Capacity | N/A |
| | West End PUD Amendment | Residential | 275 | Edwards | Yes | | 3. Cond. Capacity | 1. Plan Review |
| | **Projects Completing Warranty Period** | | | | | | | |
| | 185 Elk Tract, Piedmont Apartments, Riverfront Village, Stillwater | | | | | | | |

| Process | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Construction Approval Process Steps:** | 0. Conceptual | 1. Plan Review | 2. Plan Approval | 3. Acceptance | 4. Warranty Period | 5. Final Acceptance |
| | **Development Approval Process Steps:** | 1. Connection Application | 2.Water Demand Worksheet Analysis | 3.Conditional Capacity to Serve Letter | 4.Water Rights Allocation | 5.Water Service Agreement | 6. Ability to Serve Letter |

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UPPER EAGLE REGIONAL WATER AUTHORITY

GOVERNED BY:

The Metropolitan Districts of:
Arrowhead
Beaver Creek
Berry Creek
EagleVail
Edwards

The Town of Avon

# MEMORANDUM

**TO:** Board of Directors

**FROM:** Brian Thompson, Government Affairs Administrator

**DATE:** Mar. 23, 2023

**RE:** Summary of Authority's Feb. 23, 2023, Board Meeting

The following is a summary of items discussed at the Authority's Feb. 23, 2023, board meeting.

Directors present and acting were Chair George Gregory, Secretary Kim Bell Williams, Treasurer Geoff Dreyer, Kevin Hillgren, Mike Trueblood, and Tamra Underwood.

**Approval of minutes** Directors approved the Jan. 26, 2023, regular meeting minutes.

**Minturn 1041 IGA** Directors approved an intergovernmental agreement with the Town of Minturn for permitting of Bolts Lake Reservoir. Minturn approved the IGA at first reading on Feb. 15; second reading is scheduled for Mar. 1.

**Impact Fee Calculations** David Norris said impact fees are now being assessed only after final plans are submitted and resources will be online for customers to estimate fees during earlier planning phases.

**One-Time Leak Credit** David Norris reviewed the criterium and qualifiers for one-time credits, which customers are eligible to receive once every ten years on indoor water.

**Turf Replacement Rebates** Tim Friday said turf replacement rebates have increased from $1/square foot to $2/square foot and Edwards Metropolitan District has pledged additional funds for rebates within the EMD boundaries.

**"Do Not Flush" Wipes Legislation** Kristin Moseley said the District continues to work with Senator Dylan Roberts on Senate Bill 23-150 that would require "Do Not Flush" labeling on certain types of disposable wipes. She will testify with Siri Roman in support of the bill at the Mar. 7 Senate Business, Labor, & Technology Committee hearing.

**The following is a summary of items discussed at the Feb. 23, 2023, Joint Meeting with the Eagle River Water & Sanitation District board of directors.**

UERWA Directors present and acting were: Chair George Gregory, Secretary Kim Bell Williams, Treasurer Geoff Dreyer, Kevin Hillgren, Mike Trueblood, and Tamra Underwood.

**Colorado River Basin Issues** Kathy Chandler-Henry, Colorado River District Board President and Eagle County Commissioner, and Zane Kessler, Colorado River District Director of Government Relations, provided background about the Colorado River District, an overview of the Colorado River Compact, continued aridification in the west, and updates on hydrology, supply, and conservation issues. Directors discussed potential federal actions and the importance of research and investment in water-efficient agriculture.

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# UPPER EAGLE REGIONAL WATER AUTHORITY 2023 CONTRACT LOG

| Contract No. | Date Executed | Change Order Signed On | Project Name | Contractor | Contract Amt | Project Mgr. | Account No. | Status / Description |
|---|---|---|---|---|---|---|---|---|
| 23.20.002 | Pending | | Avon Drinking Water Facility Kitchen and Bathroom Remodel | LKSM Design, P.C. | $11,620.00 | C. Keller | 20.1.9.00.35.321 | Design new kitchen, main floor womens bathroom, new flooring throughout admin area, new janitor sink area. |
| 23.20.003 | Pending | | UERWA TOC Supplies | Veolia WTS Analytical Instruments, Inc. | $13,418.00 | K. Rosema | 20.1.9.00.15.575 | Extension of manufacturer warranty and all guidance, parts, labor, and travel expenses for certified field service engineers to perform onsite repairs. |
| 23.20.004 | Pending | | UERWA TOC Supplies | Veolia WTS Analytical Instruments, Inc. | $64,488.35 | K. Rosema | 20.1.9.00.15.575 & 20.1.2.00.00.260 | Purchase of two new analyzers, discount for trade in, and one year service contract for each analyzer. |

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EAGLE RIVER WATER & SANITATION DISTRICT

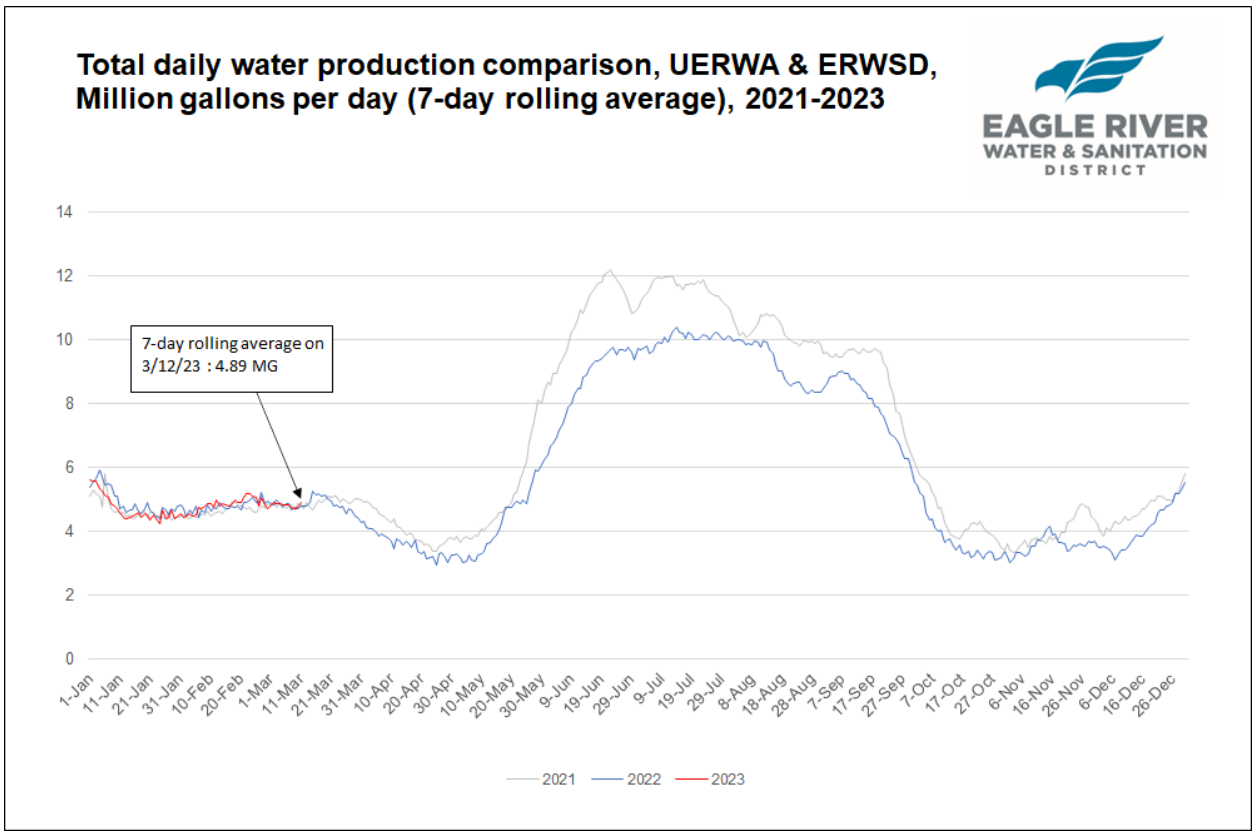
UPPER EAGLE REGIONAL WATER AUTHORITY

**OPERATIONS MONTHLY REPORT**
**March 2023**

## WATER

Brad Zachman

The system-wide water production comparison was updated through Mar. 13. System production is normal for this time of the year.




Per- and polyfluoroalkyl substances (PFAS) update:

- The detailed PFAS customer notification letter that was included in the February board packet was sent to all customers as an insert to the March 2023 billing statements. Additionally, a press release was issued on Mar. 6. The notification letter and press releases were issued with both English and Spanish translations.

- The EPA issued a proposed rule for PFAS compounds on Mar. 14. District staff members are currently reviewing the details of the proposed rule and will begin participating in the

upcoming stakeholder workgroups. An update will be provided at a future board meeting once staff assesses the potential implications to the district and authority systems.

## LABORATORY & WATER QUALITY

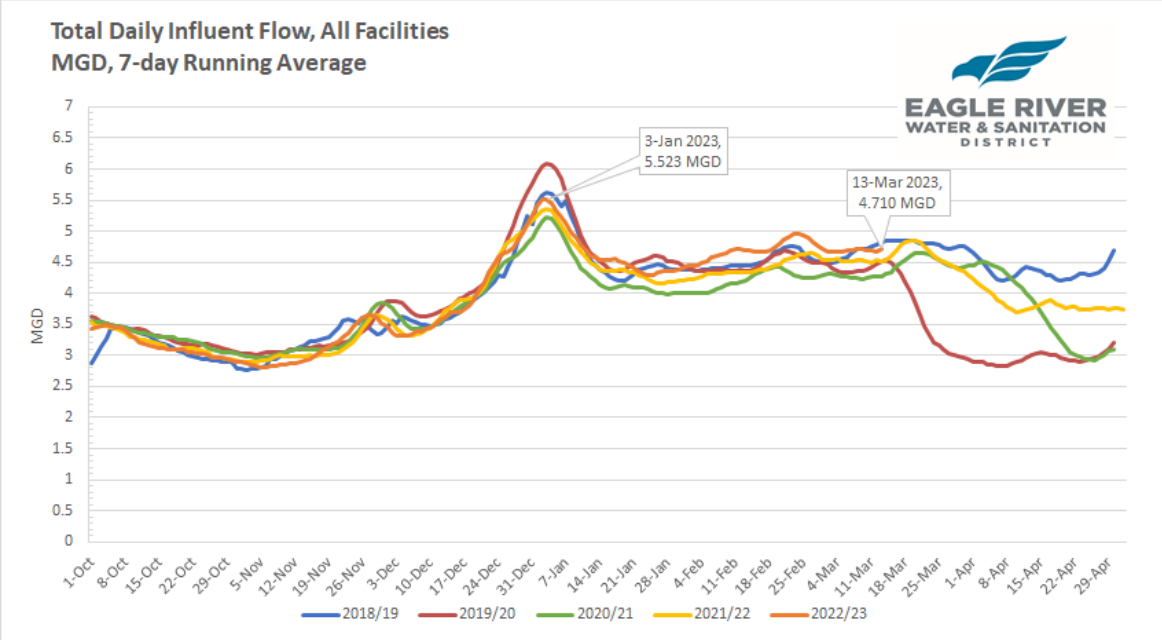
Leah Cribari

The district received the results of the macroinvertebrate sampling program that was performed in 2021. In general, the data was similar to previous years. However, there was an unexpected drop in the multi-metric index (MMI) score at one of the Gore Creek sample sites in East Vail. Staff will continue to closely monitor this site and will begin investigating potential sources of stress. A summary memo is provided in the board packet.

## WASTEWATER

Rob Ringle

Influent wastewater flows and loading have continued to trend near the high end of seasonal norms. Influent flows and loading are expected to hold steady or decline very slowly through early April before starting a steep decline as the ski season ends.




Avon Wastewater Treatment Facility (AWW) staff members continue to support ongoing process optimization and project closeout efforts related to the Nutrient Upgrade Project. Work this month included changes to the secondary process aeration control system, testing and optimization of the emergency power system, and adjustments to the Intermediate Mixed Liquor return system.

The AWW facility successfully met the CDPHE Regulation 85 effluent criteria for nutrients (total phosphorus and total inorganic nitrogen) for the first time in February! This is a major accomplishment and one of the primary objectives of the Nutrient Upgrade Project. Regulation 85

limits for total phosphorus are 1.0 mg/L (based on a 12-month rolling average) and 2.5 mg/L (based on the 12-month 95th percentile concentration). The limits for total inorganic nitrogen are 15 mg/L (based on a 12-month rolling average) and 20 mg/L (based on the 12-month 95th percentile concentration). The Regulation 85 permit requirements will be enforced beginning Jan. 1, 2024.

On Mar. 14, there was a process upset at the Edwards Wastewater Facility (EWW) that resulted in a release of approximately 100-500 gallons of digester foam into the Eagle River. The upset was caused by a rapid rise in temperature within the autothermal thermophilic aerobic digestion (ATAD) process. EWW operators responded and controlled the release within 30 minutes of discovering the issue. Field Operations staff were dispatched to initiate spill mitigation and cleanup efforts. District staff notified CDPHE immediately upon discovering the release, in accordance with spill reporting and discharge monitoring permit requirements. A final spill report will be submitted to CDPHE within the required 5-day deadline. As an immediate corrective improvement, EWW and Operational Technology (OT) staff implemented new controls and alarming instrumentation that will now alert operators of rising foam levels in the basins. The district's Engineering staff also met with a contractor to coordinate repairs of a damaged cooling water line, which operators suspect was the primary contributing factor to the process upset.

*Digester Foam*

*Eagle River Cleanup*

*Slight Foam in Eagle River*

*Spill Containment*

## FIELD OPERATIONS

Niko Nemcanin

On Feb. 20, Field Operations staff members investigated a water leak at a property on Homestead Dr. in Edwards. The source of the leak was determined to be a failed valve on the customer's service line. District staff assisted with isolating the service so that the customer could replace the failed valve.

*Water Leak Investigation (Feb. 20, Homestead Dr.)*

On Feb. 27, a major water main leak was identified on Glen Falls Lane in East Vail. The main was immediately isolated to prevent property damage to the nearby residences. Crews began mobilizing equipment on Feb. 27 and initiated excavation activities on Feb. 28. The water main was buried approximately 12 feet deep in a constrained residential area, making excavation slow, dangerous, and difficult. The source of the leak was identified on Mar. 3 and a temporary repair was made to restore water service to the affected customers. The permanent pipe repair was completed on Mar. 7. Final backfilling, site cleanup, and equipment demobilization work was completed on Mar. 10. The outage during the repair affected 21 service connections and 37 customer accounts. Water service was off from ~3:30 pm on Feb. 27 to ~1:30 pm Mar. 3 and again from 8 am to 5 pm on Mar.7. During the service disruption, District staff provided bottled water to affected customers and arranged for the use of Vail Racquet Club shower facilities.

*A deep and difficult excavation*

*Break in the 6” water main*

*New pipe installation*

*Backfilling after repairs*

On March 6, a water main leak was repaired at West Gore Creek Dr. in West Vail. There was a water outage from 8 am to 5 pm. Approximately 20 properties were affected.

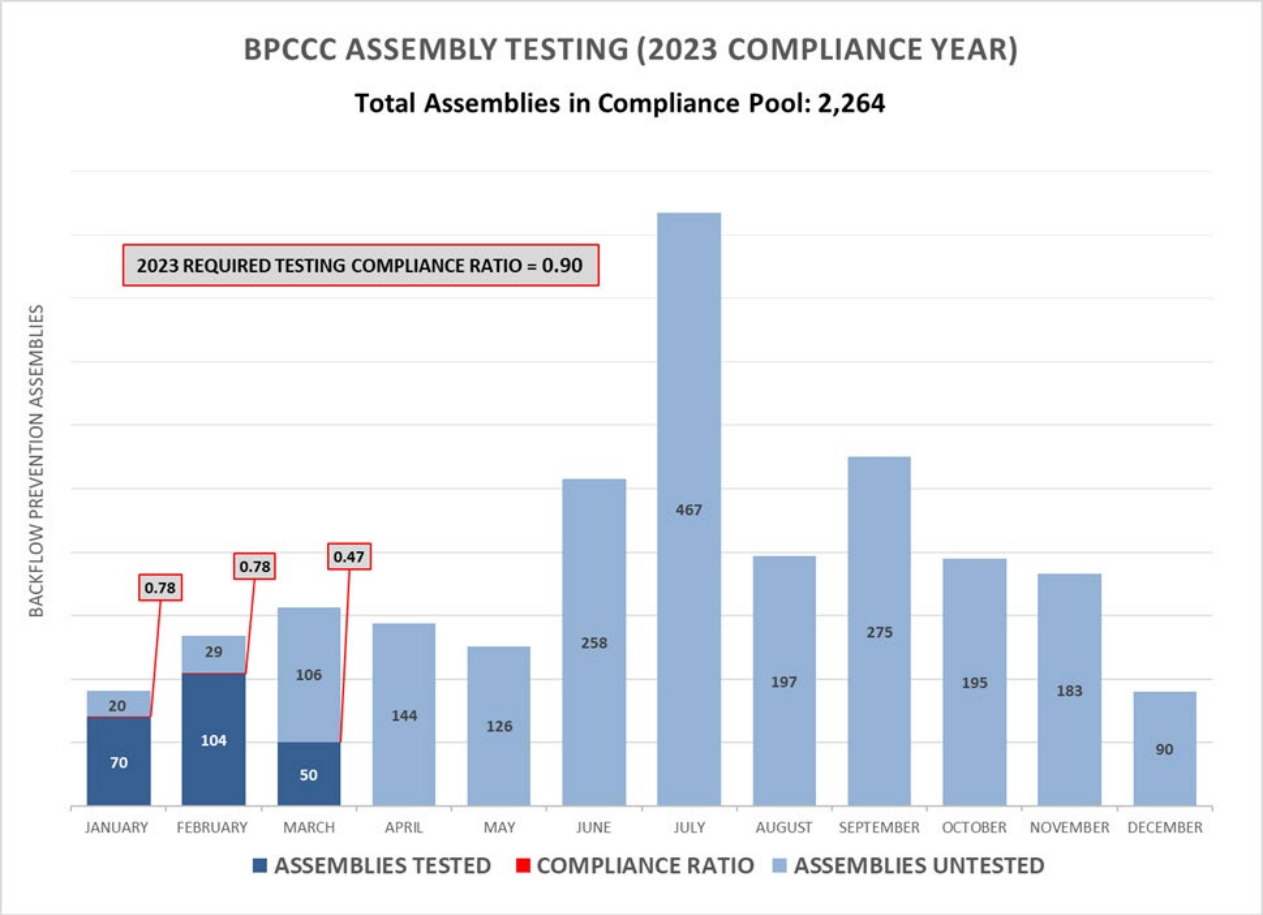
*Water Main Leak (West Gore Creek Dr)*

## UTILITY SERVICES

Shane Swartwout

### BPCCC Program

The BPCCC team has continued testing the backflow prevention assemblies that had not been tested in 2022. There are currently 23 assemblies remaining that need to be tested by the Apr. 1 regulatory deadline. Each account has been assessed a $500 fine and staff is currently scheduling appointments to test these assemblies using in-house technicians.




### Fats Oils and Grease (FOG) Program

Staff members attended the West Regional Fats, Oils, and Grease (FOG) Conference. The conference provided information and training on field inspections, equipment technology, case studies, and FOG best management practices. The team has gained a better understanding of the basic regulatory and technical framework that will be used to develop the district and authority FOG programs.

### Meter Services

The meter services team is continuing work to convert all meters to AMI. Additionally, staff is working with the AMI/meter manufacturer, Sensus, to implement the Vehicle Gateway Base

Station unit (VGB) for drive-by meter data collection. This equipment provides redundant meter reading capabilities if the AMI network is unavailable.

| Report Date: | 3/14/2023 |
|---|---|

| AMI SYSTEM STATUS | ERWSD | UERWA | TOTAL |
|---|---|---|---|
| (1) Total No. of Meters | 3195 | 6818 | 10013 |
| (2) No. of AMI Meters | 3190 | 5910 | 9100 |
| (3) System Percentage of AMI Meters | 99% | 87% | 94% |
| Meters Remaining to Reach 100% AMI | **5** | **908** | **913** |

*Meter Services – Advanced Metering Infrastructure (AMI) Status (Updated Mar. 14, 2023)*

## ENGINEERING

Jeff Schneider

### WATER PROJECTS

**Fenno Wellhouse and Raw Water Conveyance** Jeff Schneider/Carter Keller

General Project Scope: The project consists of the complete replacement of a treatment facility in Cordillera that treats water from seven groundwater wells. The previous facility did not meet electrical code, had safety concerns, and was generally at the end of its useful life. Improvements to the wells and raw water piping are also included in this project.

Project Update: A new pump and motor is currently being procured for the Fenno F6 well. Installation of the equipment will be completed this spring. The project team is working to address easement and access issues with the Fenno F7 well. The Fenno F7 well inspection is scheduled to be performed this spring.

**Avon Drinking Water Facility (ADWF) PLC Upgrades** Jenna Beairsto

General Project Scope: This project includes replacement of the programmable logic controllers (PLCs) at ADWF. Additionally, a new server room will be constructed within the facility. All existing programming and PLC logic will be reverse-engineered and updated to meet current District standards.

Project Update: The project team completed the first round of control philosophy reviews for every system in the plant. The Operational Technology (OT) team has initiated screen development and the integrator subcontractor has started programming the logic. The general contractor will mobilize to the site the first week in April to begin construction on the server room. The electrical subcontractor will also begin electrical improvements this spring.

**Water Production and Treatment Masterplan** Jenna Beairsto

General Project Scope: The masterplan will be a wholistic look at all production and treatment facilities system-wide including treatment plants and wells. The goal is to identify future capital project priorities. The project will include a detailed condition assessment of existing assets and will assess treatment and production threats from climate change, low stream flows, wildfires, etc.

Project Update: The District team has developed a risk tool to analyze the impact of threats to each of production facility. The engineering consultant is currently working to draft the report chapters that summarize the information that has been collected in Phase 1 of the project.

**Avon Wastewater Treatment Facility (AWW) Fire Flow Improvements** Woodson Spring

General Project Scope: The AWW Fire Flow Improvements consist of two major components. The first includes installation of 1,100 linear feet of 12-inch water main down Millie's Lane and into the AWW site. The second includes modifications within the Avon Drinking Water Facility (ADWF) to transfer water from the high-pressure zone to the low-pressure zone. The overall objective of the project is to bring the AWW into compliance with current fire flow requirements.

Project Update: All pipeline work has been completed. Some remaining punch list items have been wrapped into the greater AWW Nutrient Upgrade Project (NUP). Final testing will be conducted with the assistance of Eagle River Fire Protection District in the spring.

**Arrowhead Transmission Main and Valve Vault** Mark Mantua

General Project Scope: This project includes replacement of approximately 2,200 linear feet of 16-inch diameter water main from roughly the base of Arrowhead Mountain to Arrowhead Tank 1. The existing pipe is badly corroded. The project also includes installation of a new valve control vault that will help optimize tank filling and balance tank levels in the low-pressure zone.

Project Update: The final plans are being prepared. The project team is currently working to secure easements from Vail Resorts and will advertise the project once the easement agreements are completed. Additionally, a Location and Extents Application (LEA) was submitted to Eagle County and a permit application was submitted to the U.S. Army Corps of Engineers (USACE) for the portion of the work that crosses McCoy Creek.

**North Frontage Road Watermain Improvements** Woodson Spring

General Project Scope: This project involves the construction of approximately 700 linear feet of 10-inch diameter water main from the Residences at Main Gore (near the main Vail roundabout) to the culvert crossing at Middle Creek.

Project Update: The project is currently out to bid, with the bid opening scheduled for Mar. 17. Three local pipeline general contractors attended the mandatory pre bid meeting.

## WASTEWATER PROJECTS

**Avon Wastewater Treatment Facility (AWW) Nutrient Upgrades** Jeff Schneider/Jenna Beairsto

General Project Scope: The AWW requires upgrades to meet Regulation 85, which requires a reduction of the concentrations of nitrogen and phosphorus in the effluent. The scope of this project includes the following: addition of 0.6 million gallons of aeration basin capacity, installation of a new secondary clarifier, structural modifications to the existing aeration basins to remove the existing double-tees and replace with a building structure, installation of a new odor control study and system, and other improvements throughout the facility. This project also includes improvements identified in a 2017 condition assessment in other process areas throughout the facility.

Project Update: The project team completed the second formal punch list walk for the primary gallery, secondary clarifier room, the secondary gallery, and Internal Mixed Liquor Return (IMLR) and return activated sludge (RAS) pump areas. The contractor is working through items on the punch list to close out these spaces. Work is ongoing to finalize the punch list from the first punch list walk, and all work is required to be complete by Apr. 1. Work began on the retaining wall along the southern property line. A full closure and detour of the bike path is in place while this work occurs. A large boulder was encountered in the excavation for the retaining wall, and the contractor is working to demo out enough of it to continue working. AWW staff will take delivery of the first carbon chemical delivery the week of Mar. 20. Final calibration and testing will begin on that system after the chemical is delivered. District operators are starting to optimize treatment while running two parallel aeration basins and have identified an issue with the new air flow meters. The coatings subcontractor will be mobilizing at the beginning of April to begin blasting and recoating the first of the two secondary clarifiers. Roof replacement will be scheduled as weather allows.

*Excavation for the retaining wall along the southern property line*

**Dowd Junction Collection System Improvements** Jenna Beairsto

General Project Scope: The project consists of four major components, all of which are at the end of their useful lives: the aerial interceptor crossing at Dowd Junction; Lift Station 4, which conveys all of Minturn's wastewater; the aerial interceptor crossing at the Minturn Road bridge; and the force main downstream of Lift Station 4. The infrastructure will be sized to accommodate future growth in the service area, most notably the Minturn area.

Project Update: Snow removal and site cleanup occurred over the last month in preparation for construction this spring. A meeting with CDOT is scheduled for Mar. 14 to discuss remobilization and traffic impacts for the 2023 construction season. The contactor will be remobilizing to the site the week of Mar. 20. Crews will be working on snow removal at the lift station and will then utilize a vacuum truck to remove the material around the wet well for the water test. Force main work is expected to begin the week of Apr. 3.

**Avon Lab Improvements** Carter Keller

General Project Scope: The overall objective of this project is to install a new inductively coupled plasma mass spectrometer (ICP-MS) in the lab at AWW. The new instrument will enable District staff to perform metals analyses in-house. Lab and architectural modifications will be completed, including installation of a new gas cabinet, duct chase, and fume hood. Additionally, the makeup air unit (MAU) that serves the lab and the HVAC system for the lab and lab offices will be replaced.

Project Update: A large portion of the HVAC ductwork has been installed above the ceiling in the lab area. Construction efforts are currently focused on installing electrical conduit and ductwork to the roof equipment through a mechanical chase located on the exterior of the existing building.

*Installation of HVAC ductwork and conduit*

**Vail Wastewater Treatment Facility (VWW) Master Plan Improvements** Mark Mantua

General Project Scope: A condition assessment of the VWW was conducted as part of the 2017 Masterplan. The assessment identified several critical upgrades that are required to keep the facility in reliable and operable condition. The scope of this project includes installation of a new, larger diesel generator and associated electrical, structural repairs in the aeration basin, equalization, and clarifier rooms, replacement of the aging ultraviolet (UV) system, and construction and installation of an external facility bypass.

Project Update: Construction work is on a winter hiatus until Phase II of the project begins in spring 2023. The final contract price was negotiated, scopes of work were adjusted, and a final contract was drafted and finalized. The design engineer is currently working to issue 100% plans for Phase II of the project and an updated building permit was submitted to the Town of Vail. The project team has reviewed submittals for the ultraviolet (UV) disinfection system, mechanical bar screen, and Parshall flume and is currently coordinating equipment procurement. District staff members are preparing procedures to test a VWW wastewater flow bypass before Phase II begins. A full-flow bypass of VWW will be required during Phase II construction activities.

## GENERAL CAPITAL

**Fleet Maintenance Facility** Mark Mantua

General Project Scope: The District's fleet maintenance shop, which is currently located at the Avon Wastewater Treatment Facility (AWW), needs to be relocated before a planned administrative expansion project can be initiated. The scope of this preliminary planning project is to define a conceptual footprint for the building and identify possible site locations.

Project Update: The engineering consultant developed a final conceptual-level site plan for a proposed facility located on the east side of the Edwards Wastewater Treatment Facility. District staff is currently reviewing the final conceptual design report. In parallel, the team is beginning to evaluate alternative building sites at the Hillcrest site (in Edwards) and the AWW. The consultant and district staff are working together to finalize a scope of work for alternate site review.

**Vail Administration Bathroom Renovations** Jenna Beairsto

General Project Scope: The district will be renovating all three of the restrooms at the Vail Administration Building. The project focuses on replacing existing fixtures with high efficiency, low flow devices. The work will be phased to keep restrooms open for people working out of the facilities.

Project Update: A notice of award was issued to a contractor for renovation of all three restrooms. A kickoff meeting is scheduled for Mar. 15 to discuss schedule and phasing. It is anticipated that the upstairs restrooms, outside of the Walter Kirsch conference room, will likely be the first restrooms to get renovated. Please excuse our construction and we appreciate everyone's flexibility as we work through these improvements.

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EAGLE RIVER WATER & SANITATION DISTRICT

**M E M O R A N D U M**

| | |
|---|---|
| **TO:** | District and Authority Board Members |
| **FROM:** | Leah Cribari, Laboratory and Regulatory Compliance Supervisor |
| **DATE:** | March 13, 2023 |
| **RE:** | 2021 Macroinvertebrate Sampling Results |

**Background:**

Benthic macroinvertebrate community characteristics are commonly used as biological indicators of water quality and stream health conditions. Most macroinvertebrate taxa have relatively long aquatic life stages, limited mobility, and specific adaptations to the environment that make certain taxa sensitive to different types of stress from pollutants or habitat disturbance. In 2010, the Colorado Water Quality Control Commission (WQCC) adopted Policy Statement 2010-1. This Policy Statement details the methodology for using macroinvertebrate population metrics for assessment of aquatic life use attainment in streams and rivers. This methodology is based upon a multi-metric index (MMI) score for determining whether or not a stream is in attainment of the aquatic life use. In 2012, the WQCC added Gore Creek to the state's 303(d) list for aquatic life use impairment with a "provisional" qualifier indicating that the cause of impairment was not known. Today, Gore Creek remains provisionally listed for aquatic life use impairment.

The figures below were produced to show the sampling locations and the MMI scores for 2009 through 2021 at the sampling sites on Gore Creek, Black Gore Creek, Red Sandstone Creek, and the Eagle River. The figure includes sampling sites from upstream (left) to downstream (right). On each figure, the green dashed line represents the aquatic life use attainment threshold and the red dashed line represents the impairment threshold. The space in between these two lines is referred to as the "gray zone" where two auxiliary metrics (Shannon Diversity and Hilsenhoff Biotic Index) are used to determine attainment. If a sample produces an MMI score in the "gray zone," but fails either one of the auxiliary metrics, the site is deemed "impaired." Sites with failing scores, or "aquatic life use impairment," are represented by bars with crosshatch fill, while bars with solid fill indicate attainment. Twelve years of data are now available at most sites within the study area.

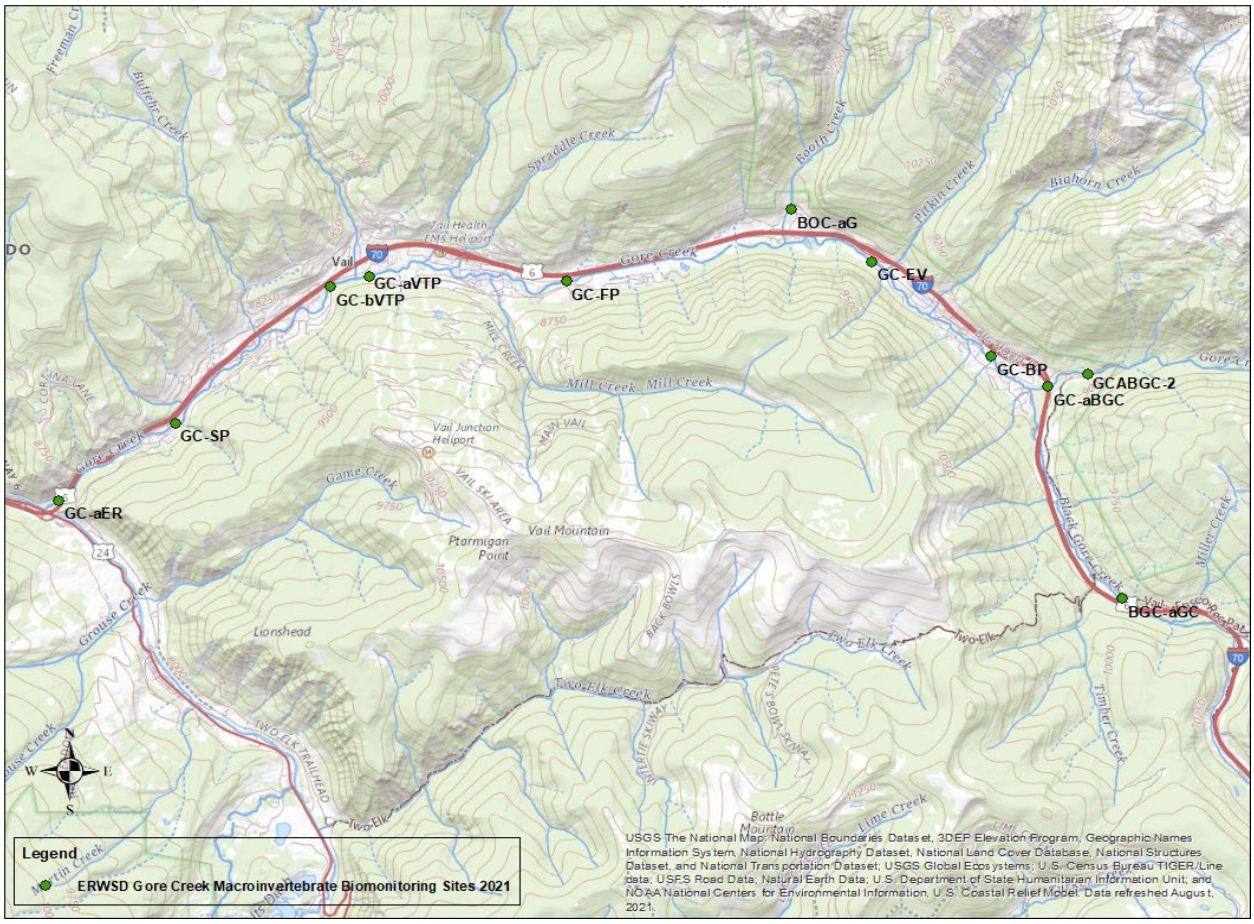
**MMI Version 3 (v3) versus Version 4 (v4):**

In 2017, the MMI v3 was recalibrated and updated to produce a new analysis tool, the MMI v4 (Colorado Department of Public Health and Environment 2017). Both versions of the MMI (v3

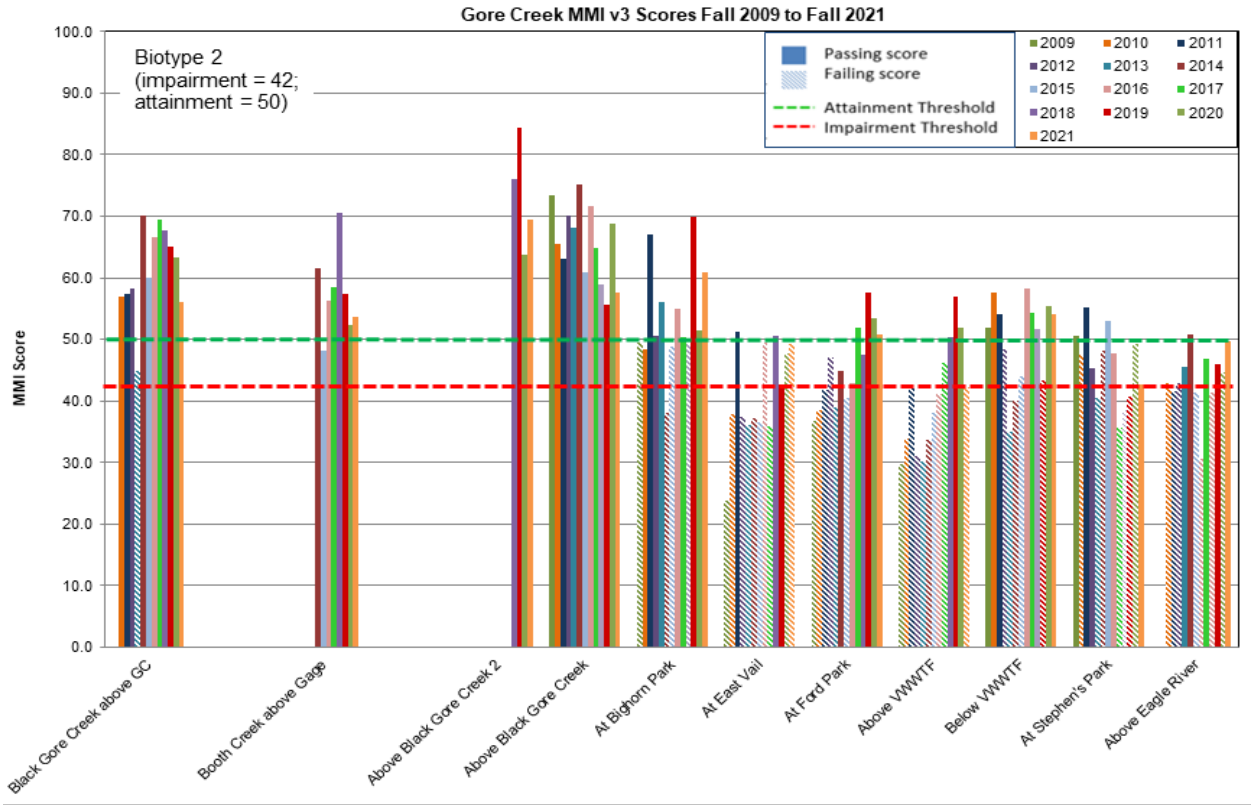
and v4) utilize several individual metrics to assess the health of aquatic communities in Colorado streams. When using either version of the MMI, the individual metrics (components) of the tool will automatically change depending on the location of the study site (high mountains, transitional areas, or plains). Scores are based on a scale from 0 to 100, and thresholds were set to determine “attainment” vs. “impairment.” The differences between v3 and v4 mostly occur in the selection of individual metrics that were used to construct the index. The MMI (v4) uses eight equally weighted metrics to provide a single index score, whereas the MMI (v3) used five or six. Many of the individual metrics utilized in the MMI (v4) were not used in the MMI (v3). Consequently, the two versions of the MMI emphasize and evaluate different characteristics of the macroinvertebrate community. At high elevations, the MMI (v3) is mostly influenced by the presence/absence and relative abundance of taxa that are considered moderately to highly sensitive to human disturbances, while the MMI (v4) puts greater emphasis on the relative abundance of the most sensitive taxa. This means that the MMI (v4) is less sensitive to improvements in water quality (or habitat) that allow for low numbers of sensitive (or moderately sensitive) taxa to recolonization specific habitats. Since the components of the MMI have changed, the thresholds used to measure “attainment” vs. “impairment” have also changed. The MMI v3 and v4 were essentially constructed in the same way but use different components to measure different aspects of the health of aquatic life.

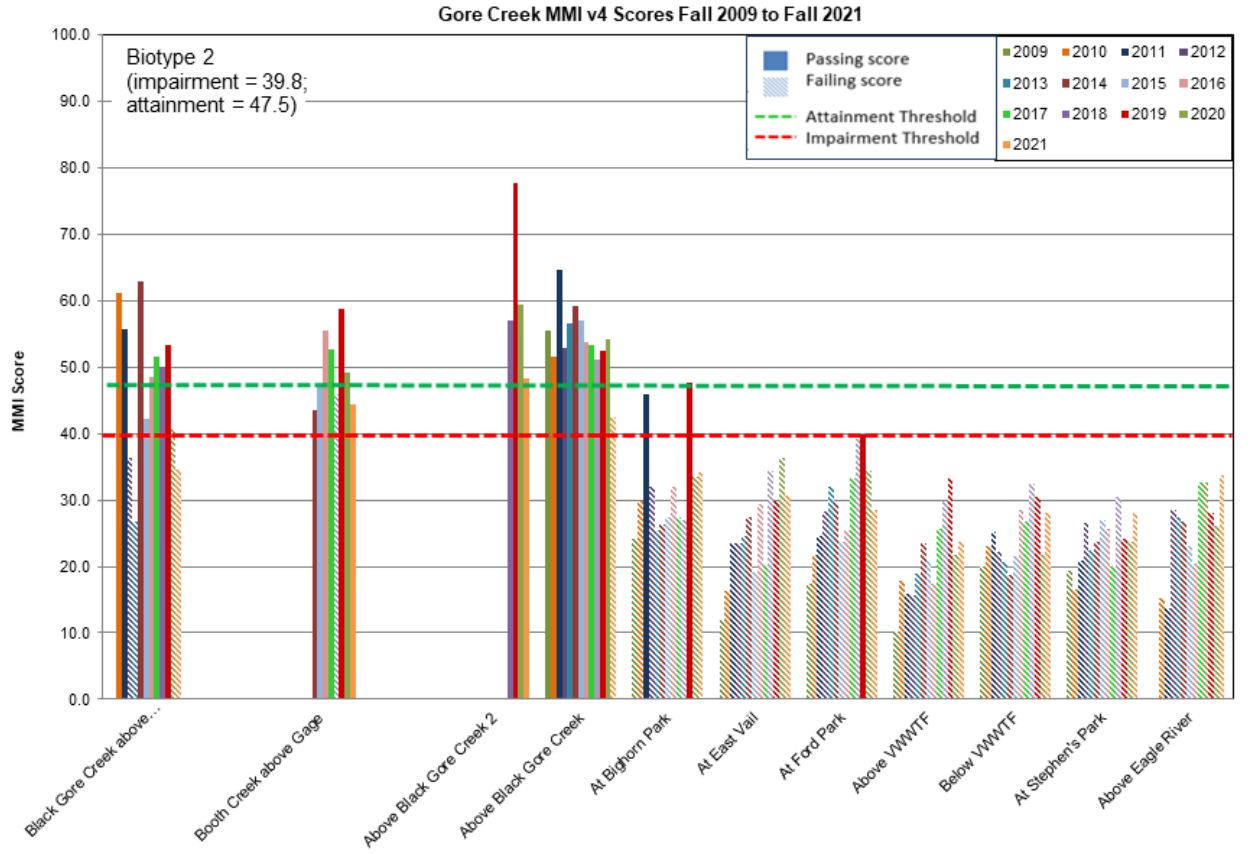
**Gore Creek:**

Gore Creek continues to show improved MMI scores using v3, which indicates that the *Restore the Gore* management strategies are working. In 2021, all sites except East Vail and Above Vail WWTF had attaining scores using v3. Since the commencement of *Restore the Gore* project, several new and sensitive insect taxa (previously only found at reference sites) have started to appear at impaired study sites on Gore Creek. This has resulted in higher scores from the MMI (v3) in stream segment that are surrounded by residential and urban development. Unfortunately, the detection of new sensitive taxa (in low densities) and the improved relative abundance of moderately sensitive have not been sufficient to have a substantial positive influence on the MMI (v4). The MMI v4 is more stringent on mountainous regions, thus bringing the scores below attainment on most of Gore Creek. In 2018, a sampling site was added above the East Vail campground as a new reference site. In 2019, there was a significant reduction in the MMI scores from above the campground to below the campground, indicating increased stress, but in 2020 the decrease in scores was not as significant. In 2021, impairment begins at Gore Creek Above Black Gore Creek. This was the first year Gore Creek Above Black Gore Creek had failing scores. All of the MMI (v4) scores at study sites in the Gore Creek Basin appear to be negatively influenced by low proportions of the most sensitive taxa. At this time, potential sources of stress outside of areas with residential development are unknown.



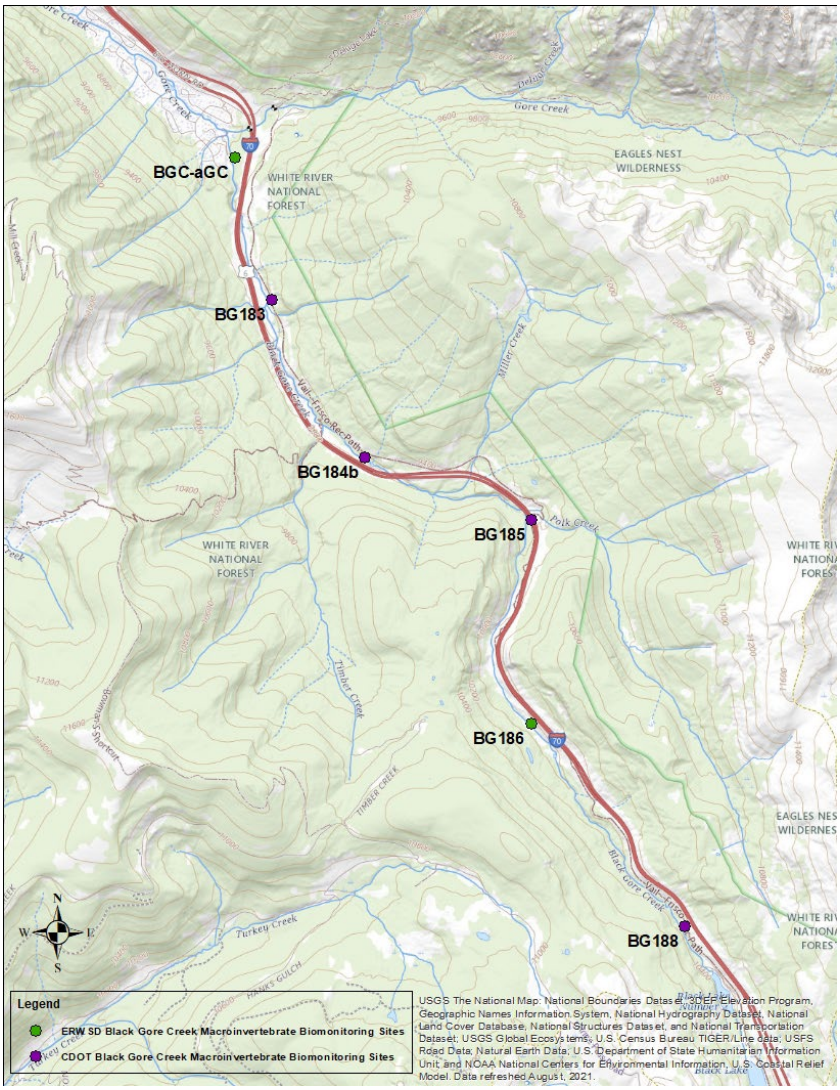

**2021 Gore Creek Macroinvertebrate Biomonitoring Sites**


Gore Creek MMI v3 Scores Fall 2009 to Fall 2021
Biotype 2
(impairment = 42;
attainment = 50)
Passing score
Failing score
Attainment Threshold
Impairment Threshold
2009 2010 2011
2012 2013 2014
2015 2016 2017
2018 2019 2020
2021
MMI Score
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Black Gore Creek above GC
Booth Creek above Gage
Above Black Gore Creek 2
Above Black Gore Creek
At Bighorn Park
At East Vail
At Ford Park
Above VWWTF
Below VWWTF
At Stephen's Park
Above Eagle River

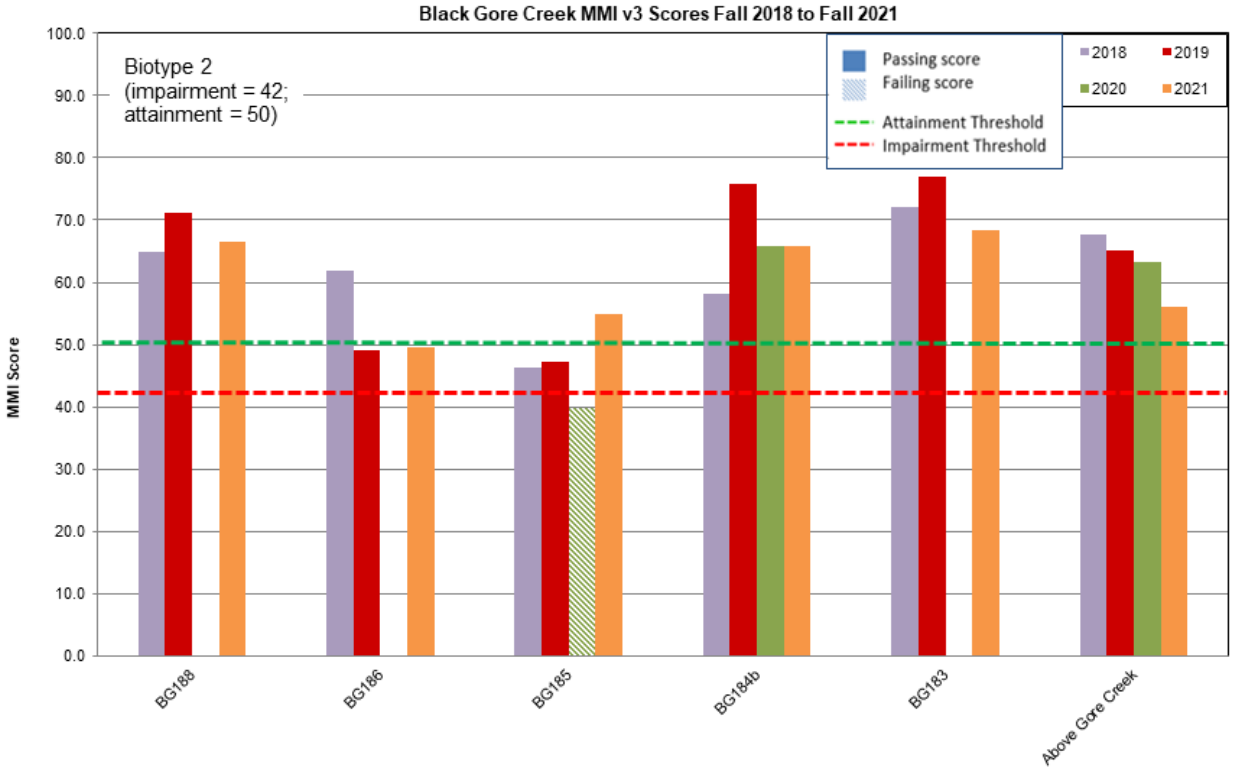

Gore Creek MMI v4 Scores Fall 2009 to Fall 2021
Biotype 2
(impairment = 39.8;
attainment = 47.5)
Passing score
Failing score
Attainment Threshold
Impairment Threshold
2009 2010 2011 2012
2013 2014 2015 2016
2017 2018 2019 2020
2021
MMI Score
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Black Gore Creek above...
Booth Creek above Gage
Above Black Gore Creek 2
Above Black Gore Creek
At Bighorn Park
At East Vail
At Ford Park
Above VWWTF
Below VWWTF
At Stephen's Park
Above Eagle River

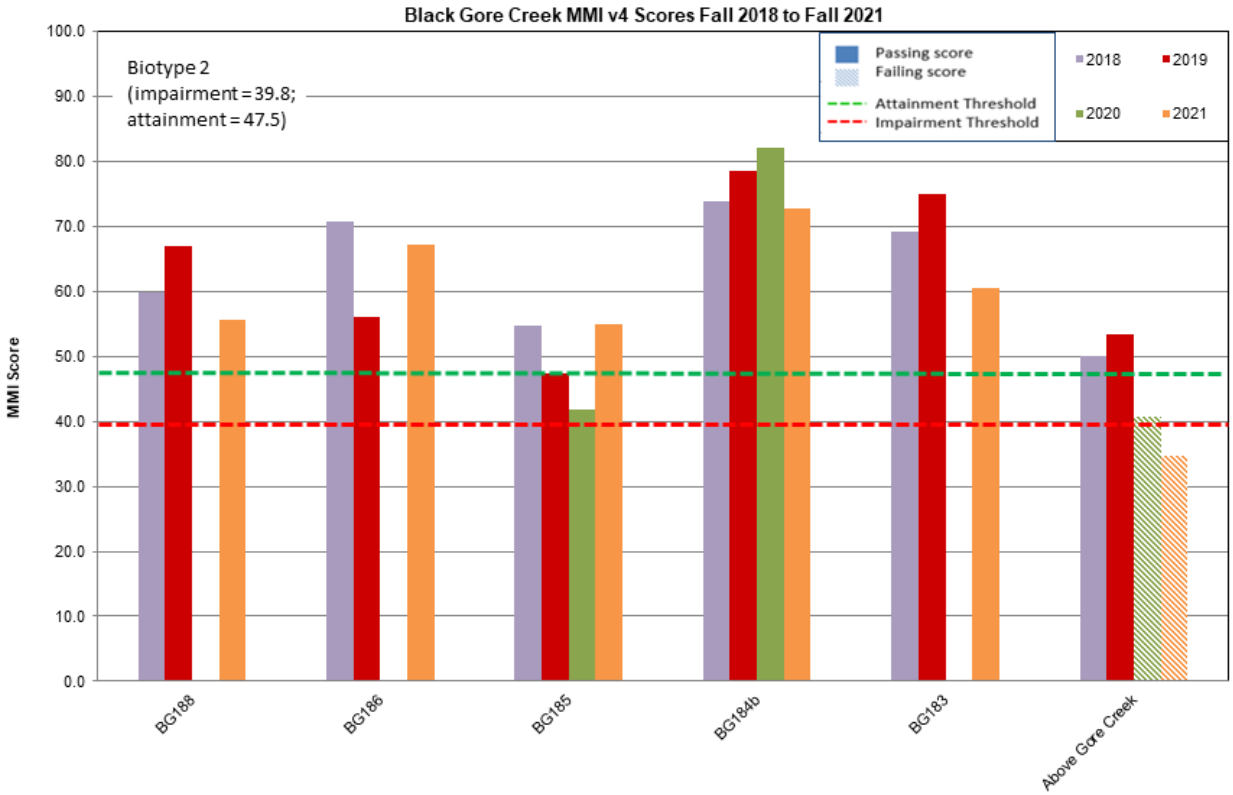
**Black Gore Creek:**

In 2018 and 2019, six sites were sampled on Black Gore Creek. The purpose of adding these sites was to develop comprehensive background data on Black Gore Creek. This background data will be an important metric to track water quality impacts of the I-70 West Vail Pass Auxiliary Lanes construction project. In response to the District's request for CDOT to monitor water quality in Black Gore Creek, CDOT contracted David Rees to sample BG188, BG186, Above Miller Creek, and BG183 (numbers represent highway mile marker locations) in 2020 and 2021. CDOT has committed to collecting and sharing data at these sites for the next 4 years, thereby reducing ERWSD sampling costs. MMI v3 shows impairment at BG185. MMI v4 shows impairment at Above Gore Creek. Dave Rees commented in MMI v3, BGC185 sediment disposition affected the score. MMI v4 Above Gore Creek, sensitive taxa are present but in lower numbers and more sediment deposition affected the score.



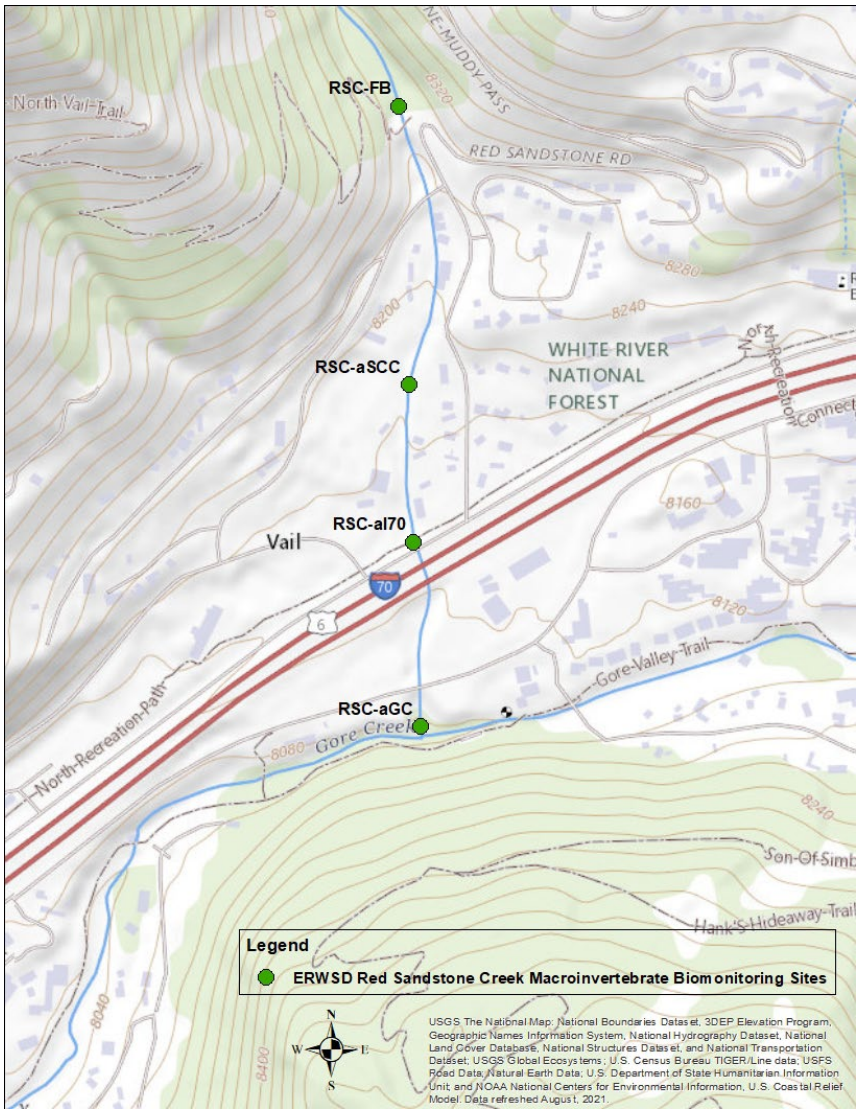

**2021 Black Gore Creek Macroinvertebrate Biomonitoring Sites**


Black Gore Creek MMI v3 Scores Fall 2018 to Fall 2021
Biotype 2
(impairment = 42;
attainment = 50)
Passing score
Failing score
Attainment Threshold
Impairment Threshold
2018
2019
2020
2021
MMI Score
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
BG188
BG186
BG185
BG184b
BG183
Above Gore Creek

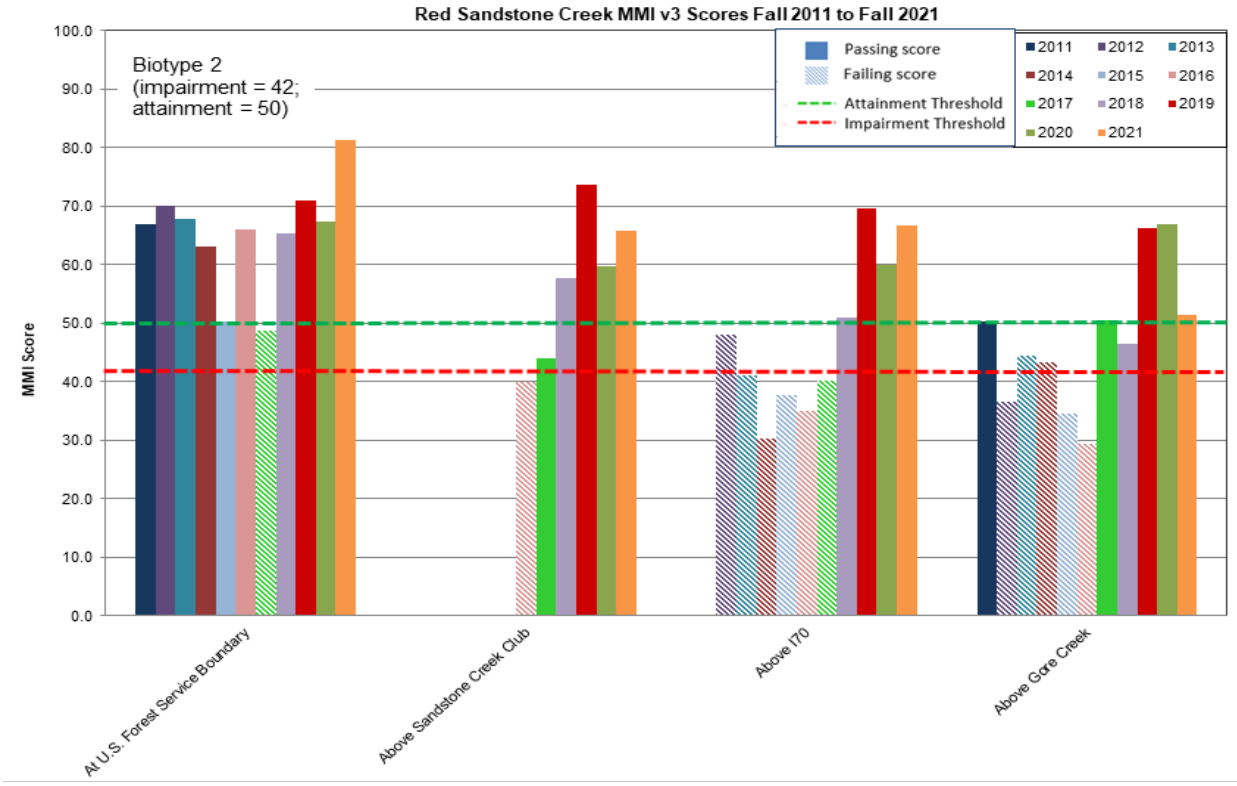

Black Gore Creek MMI v4 Scores Fall 2018 to Fall 2021
Biotype 2
(impairment = 39.8;
attainment = 47.5)
Passing score
Failing score
Attainment Threshold
Impairment Threshold
2018
2019
2020
2021
MMI Score
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
BG188
BG186
BG185
BG184b
BG183
Above Gore Creek

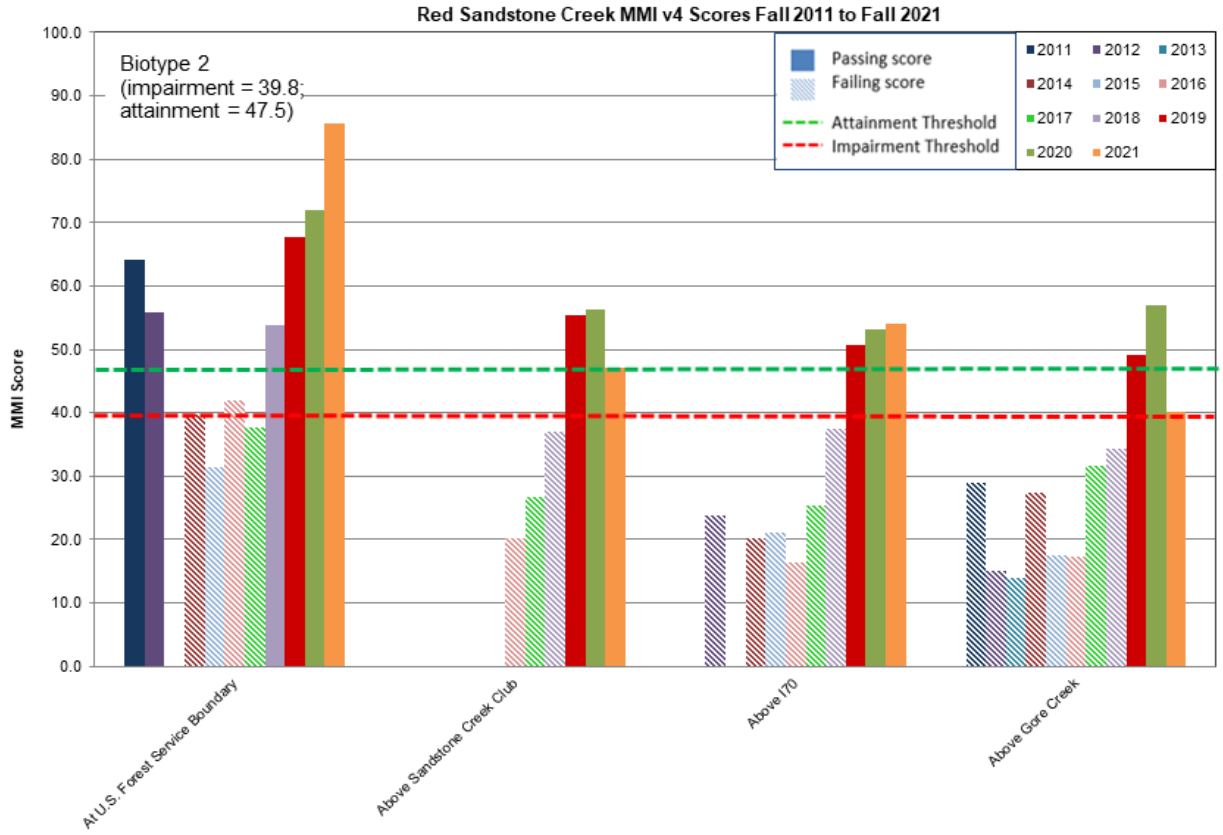
**Red Sandstone Creek:**

All sampling sites on Red Sandstone had passing MMI scores in 2021 using the v3 and v4 metric tool; this is the third year in a row that all four sites were passing using both versions. For the past few years, Town of Vail staff has been working to improve the riparian and landscape practices along Red Sandstone Creek. Peter Wadden has spoken to numerous homeowners along the creek regarding this matter. The recent improved results show that his education and outreach efforts continue to help improve the conditions.



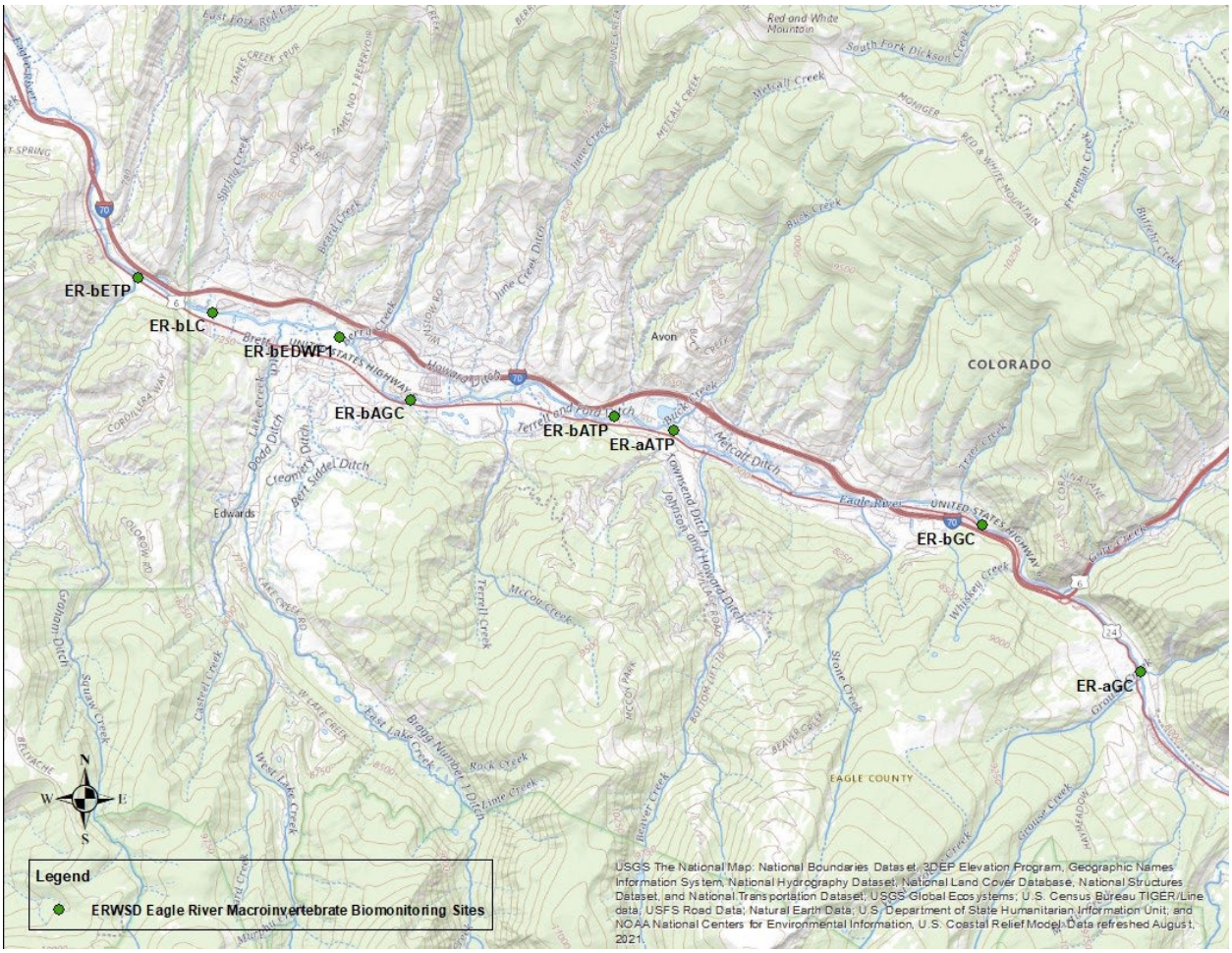

**2021 Red Sandstone Creek Macroinvertebrate Biomonitoring Sites**


Red Sandstone Creek MMI v3 Scores Fall 2011 to Fall 2021
Biotype 2
(impairment = 42;
attainment = 50)
Passing score
Failing score
Attainment Threshold
Impairment Threshold
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
MMI Score
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
At U.S. Forest Service Boundary
Above Sandstone Creek Club
Above I70
Above Gore Creek

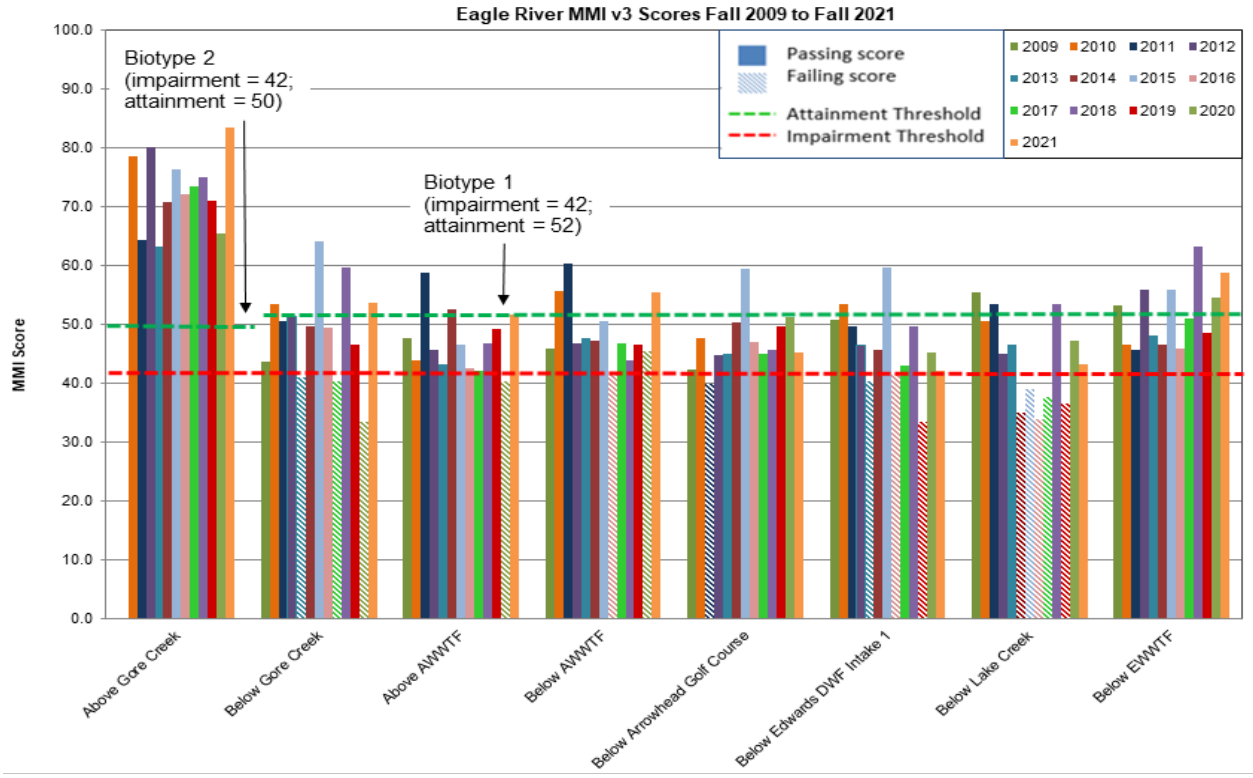

Red Sandstone Creek MMI v4 Scores Fall 2011 to Fall 2021
Biotype 2
(impairment = 39.8;
attainment = 47.5)
Passing score
Failing score
Attainment Threshold
Impairment Threshold
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
MMI Score
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
At U.S. Forest Service Boundary
Above Sandstone Creek Club
Above I70
Above Gore Creek

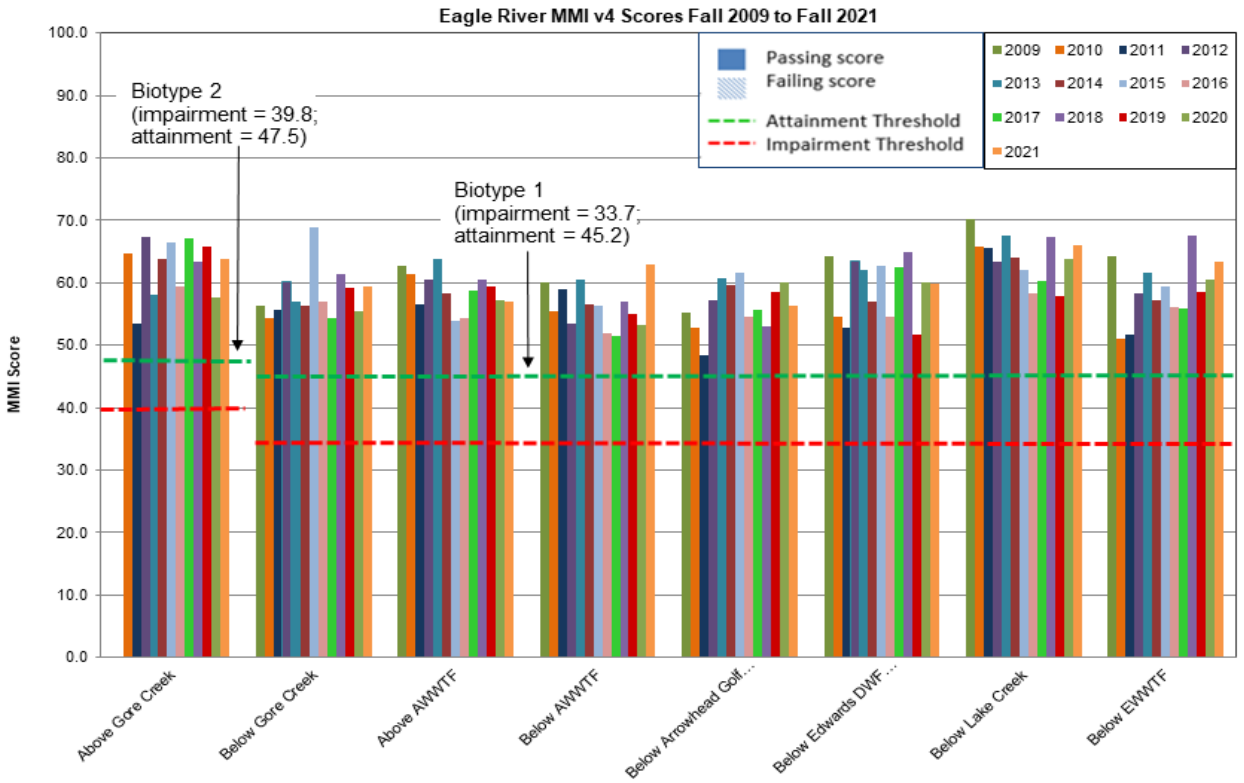
**Eagle River:**

The 2021 MMI v4 scores for the Eagle River were all passing.




**2021 Eagle River Macroinvertebrate Biomonitoring Sites**


Eagle River MMI v3 Scores Fall 2009 to Fall 2021
MMI Score
Biotype 2
(impairment = 42;
attainment = 50)
Biotype 1
(impairment = 42;
attainment = 52)
Passing score
Failing score
Attainment Threshold
Impairment Threshold
2009 2010 2011 2012
2013 2014 2015 2016
2017 2018 2019 2020
2021
Above Gore Creek
Below Gore Creek
Above AWWTF
Below AWWTF
Below Arrowhead Golf Course
Below Edwards DWF Intake 1
Below Lake Creek
Below EWWTF


Eagle River MMI v4 Scores Fall 2009 to Fall 2021
MMI Score
Biotype 2
(impairment = 39.8;
attainment = 47.5)
Biotype 1
(impairment = 33.7;
attainment = 45.2)
Passing score
Failing score
Attainment Threshold
Impairment Threshold
2009 2010 2011 2012
2013 2014 2015 2016
2017 2018 2019 2020
2021
Above Gore Creek
Below Gore Creek
Above AWWTF
Below AWWTF
Below Arrowhead Golf…
Below Edwards DWF …
Below Lake Creek
Below EWWTF

Return to agenda

EAGLE RIVER WATER & SANITATION DISTRICT

UPPER EAGLE REGIONAL WATER AUTHORITY

**M E M O R A N D U M**

**TO:** District and Authority Boards of Directors

**FROM:** Jason Cowles, P.E.

**DATE:** March 15, 2023

**RE:** Engineering & Water Resources Report

**Bolts Lake Update**

The EPA published notice of a 30-day comment period for the partial deletion of the Trestle Area from Operating Unit 3 (OU3) of the Eagle Mine Superfund site in the Vail Daily on Feb. 22. The approximately 5.3 acre portion of the site proposed for deletion has met residential cleanup standards following the completion of remediation activities prior to the District and Authority's purchase of the property last spring. The comment period runs until Mar. 24.

Colorado Water Conservation Board (CWCB) staff are presenting a recommendation on the Colorado Water Plan Grant request for Bolts Lake Preliminary Design at the CWCB board meeting held in Steamboat Springs on Mar. 15 and 16. Staff are recommending that the CWCB Board approve the $250,000 grant funding request. We will update the Boards on the outcome at next week's meeting.

Shannon & Wilson conducted exploratory test pits at the District's Biosolids Containment Facility (BCF) the week of Feb. 27 to evaluate the potential use of clay soils from the BCF site for the construction of the dam and liner at Bolts Lake. A substantial portion of the 25 acre BCF property is covered with clay deposits in excess of 15' deep. Several test pits were excavated to profile the depth of the deposits and collect samples of the material for laboratory analysis. Following the completion of laboratory analysis, Shannon & Wilson will make a determination on the suitability of the clay for use in the reservoir. If the clay is suitable for use in the reservoir, we will need to have a mineral reservation removed from the patent that was issued to the District for the BCF property by the BLM.

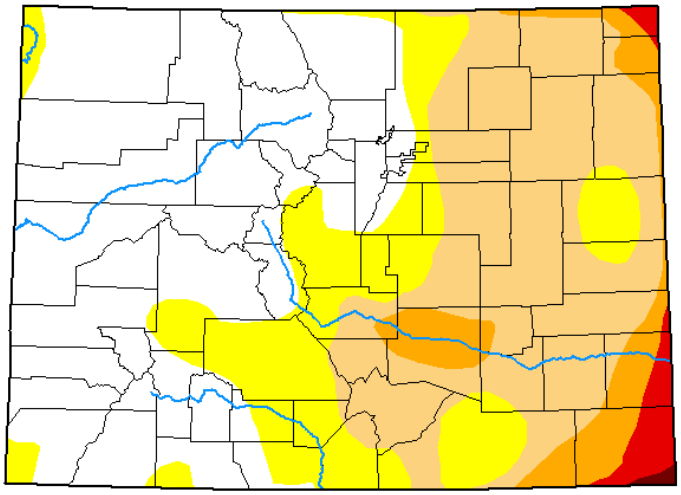
**Water Resources Update**

The latest U.S. Drought Monitor map for Colorado is shown below in Figure 1. Conditions across the state are largely improved. Eagle County has been removed from drought status.

Figure 1: US Drought Monitor, Colorado March 7, 2023 (National Drought Mitigation Center).

***U.S. Drought Monitor***

# Colorado



## March 7, 2023

***(Released Thursday, Mar. 9, 2023)***

**Valid 7 a.m. EST**

*Drought Conditions (Percent Area)*

| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|---|---|---|---|---|---|---|
| **Current** | 44.74 | 55.26 | 36.48 | 7.94 | 2.00 | 0.16 |
| **Last Week** *02-28-2023* | 45.67 | 54.33 | 37.42 | 7.94 | 2.00 | 0.16 |
| **3 Months Ago** *12-06-2022* | 16.26 | 83.74 | 43.34 | 31.27 | 4.35 | 0.58 |
| **Start of Calendar Year** *01-03-2023* | 39.97 | 60.03 | 33.83 | 12.28 | 1.91 | 0.01 |
| **Start of Water Year** *09-27-2022* | 15.46 | 84.54 | 45.65 | 15.47 | 3.73 | 0.57 |
| **One Year Ago** *03-08-2022* | 0.00 | 100.00 | 91.57 | 57.26 | 6.10 | 0.13 |

*Intensity:*

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx*

*Author:*

Deborah Bathke
National Drought Mitigation Center

**droughtmonitor.unl.edu**

Current monthly temperature and precipitation outlooks through March 2023 are shown in Figures 2 and 3. Modeling indicates that temperatures in western Colorado are leaning below normal and precipitation is leaning above normal through the end of March.

Figure 2: Seasonal Temperature Outlook February 28, 2023 (NOAA Climate Prediction Center).

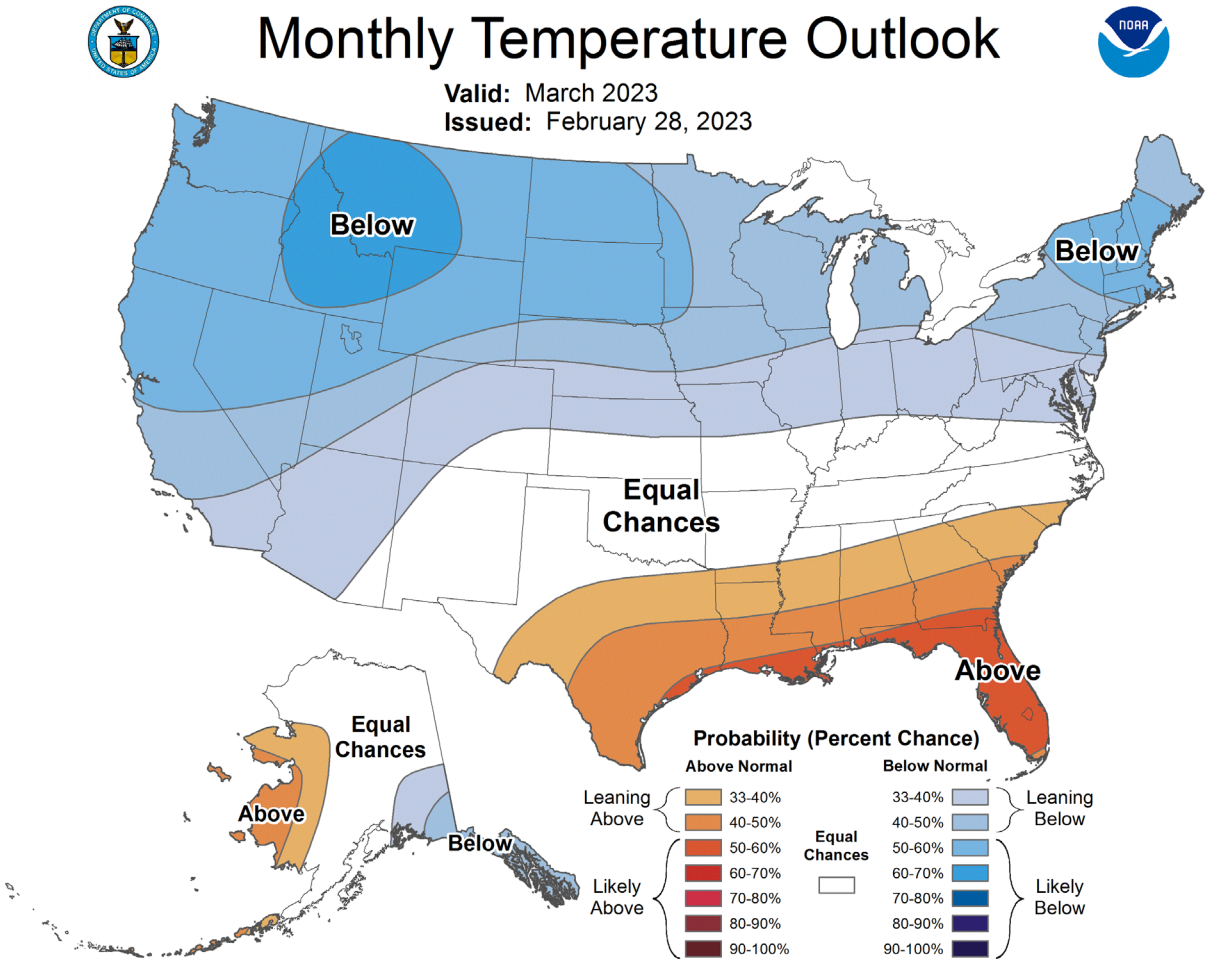
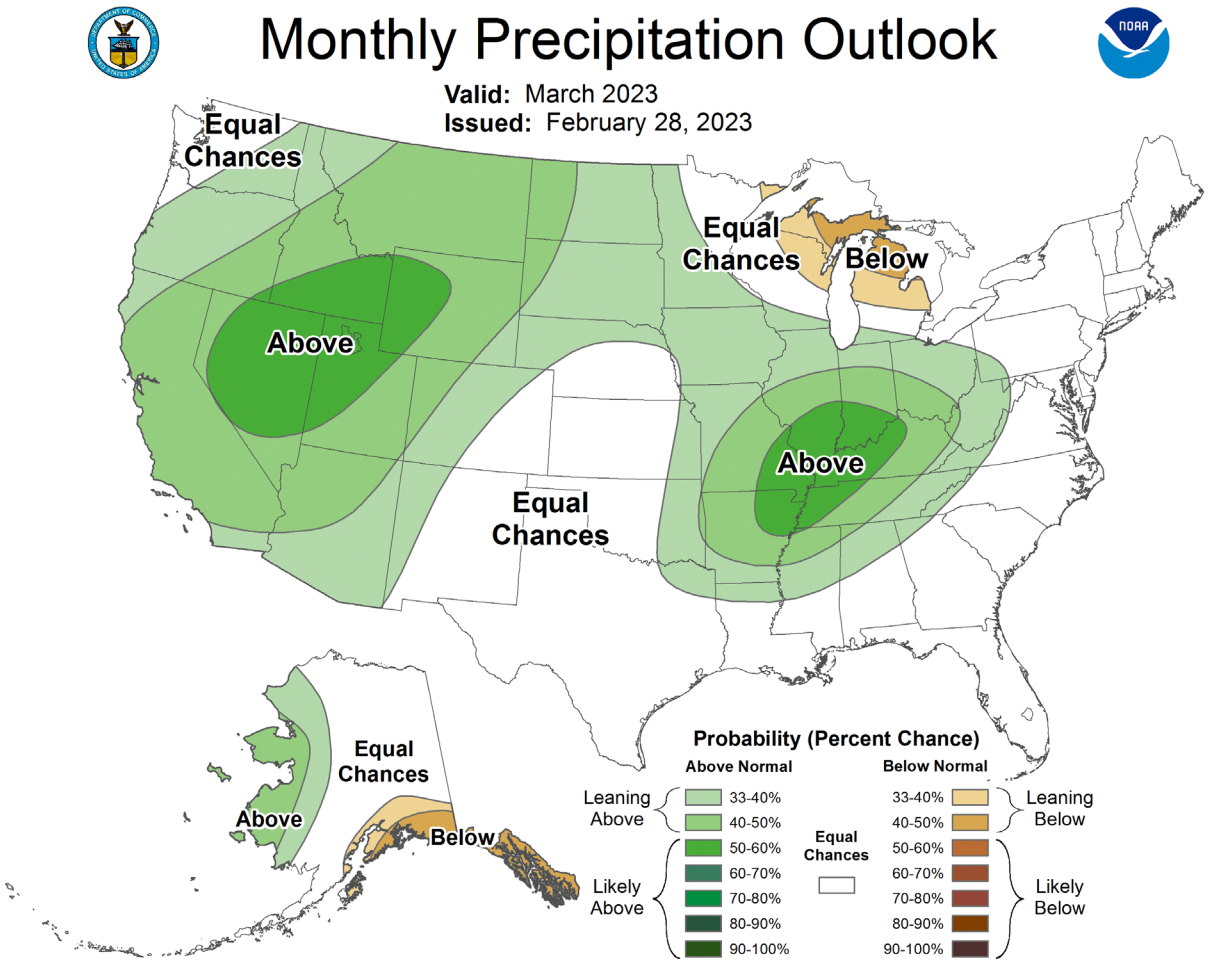


Figure 3: Monthly Precipitation Outlook February 28, 2023 (NOAA Climate Prediction Center).



Snow Water Equivalent (SWE) graphs at the Vail Mountain and Freemont Pass SNOTEL sites are shown in Figures 4 and 5 respectively. The Vail Mountain Snotel site is 114% of median for Mar. 13 with 18.3 inches of SWE. The Freemont Pass Snotel site lags the Vail site at 93% of median with 12.6 inches of SWE. Despite positive overall snowpack trends to date, the Freemont Pass Snotel site sits at 63% of the median Peak SWE with about 61 days remaining before the typical peak occurs. Above average spring snowfall will be needed for the site to reach the median peak SWE. Overall snowpack conditions on the Western Slope remain above average with the upper Colorado River basin at 124% of normal (Figure 6).

Figure 4: Snow Water Equivalent at Vail Mountain SNOTEL, March 13, 2023 (USDA).

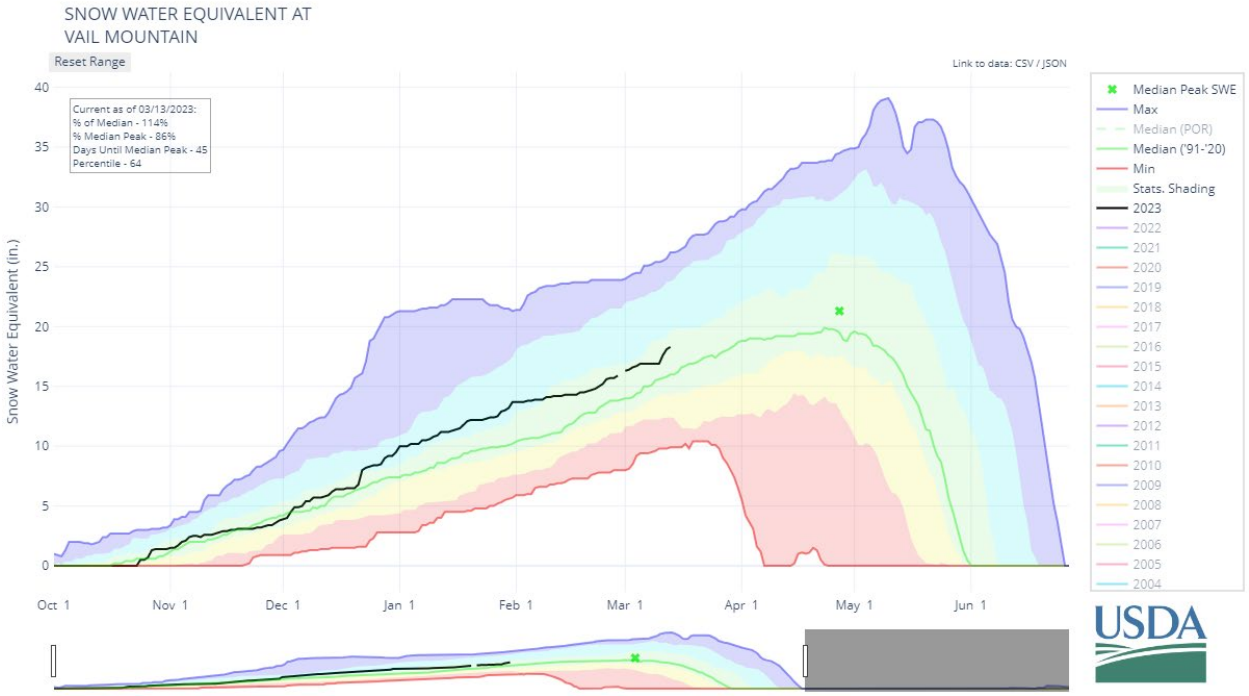


Figure 5: Snow Water Equivalent at Fremont Pass SNOTEL, March 13, 2023 (USDA).

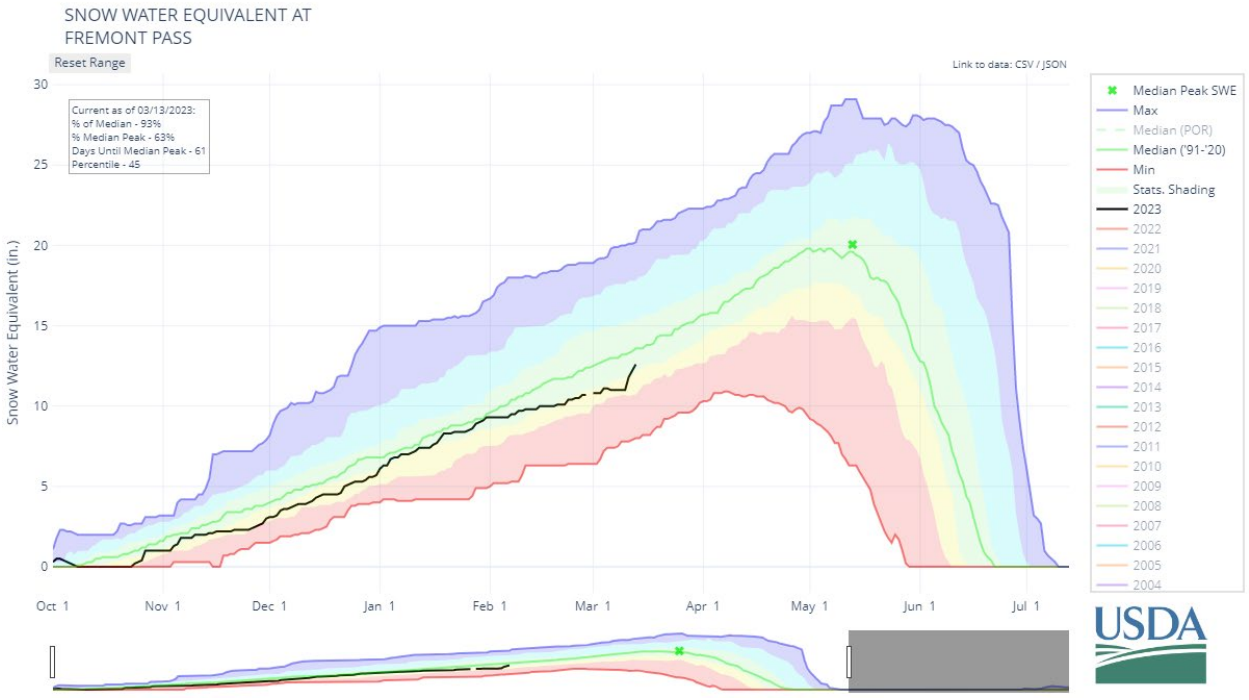
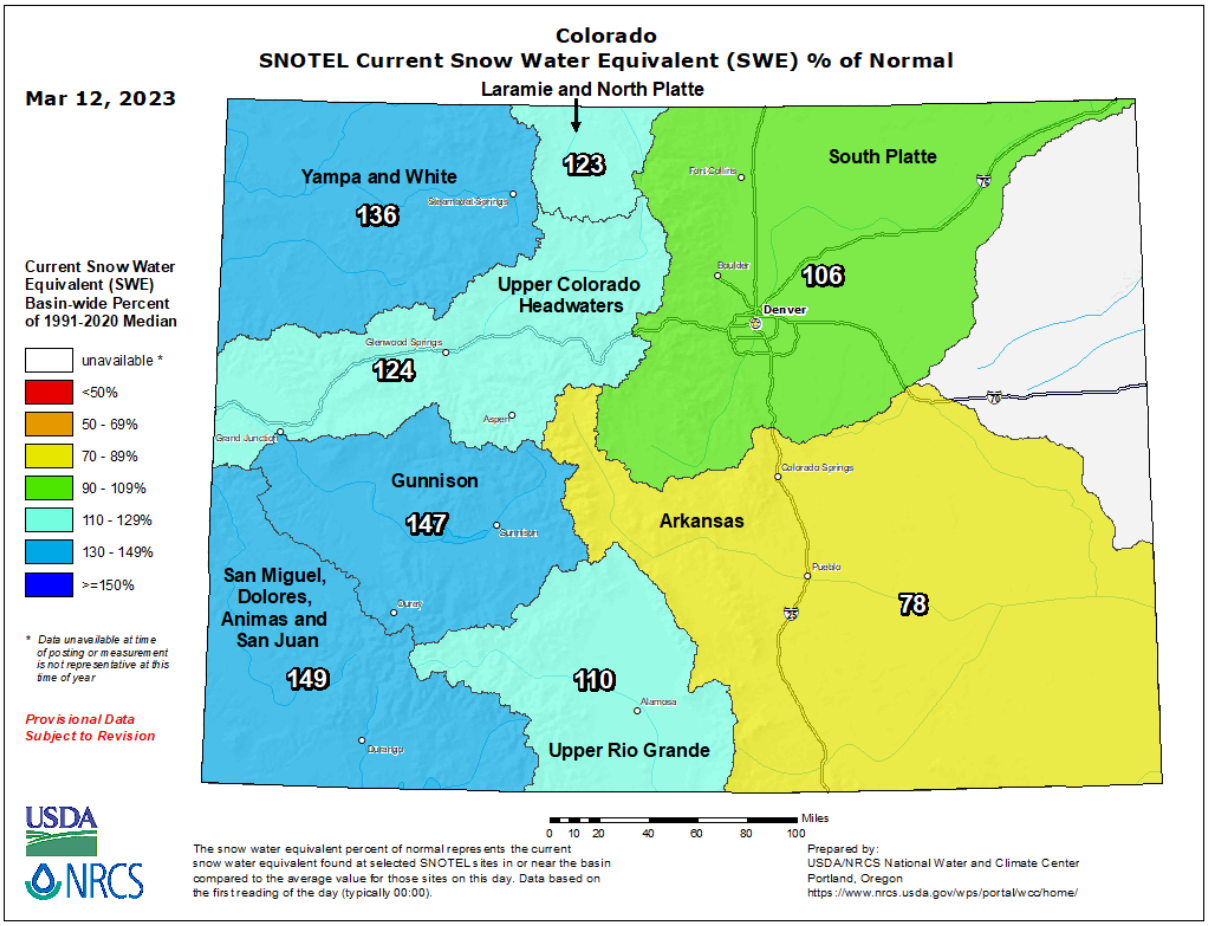


Figure 6: Colorado Current Snow Water Equivalent (SWE) % of Normal March 12, 2023 (USDA).



Return to agenda

EAGLE RIVER WATER & SANITATION DISTRICT

UPPER EAGLE REGIONAL WATER AUTHORITY

# MEMORANDUM

**TO:** Boards of Directors

**FROM:** Diane Johnson, Communications & Public Affairs Manager

**DATE:** March 23, 2023

**RE:** Communications and Public Affairs Report

**Senate Bill 23-150: Do Not Flush labeling on disposable wipes**

As previously discussed, district staff initiated legislation to require "Do Not Flush" labeling on wipes that were not designed to be flushed down a toilet.

Sen. Dylan Roberts took up the issue and is co-prime sponsor with Sen. Perry Will of Senate Bill 23-150: Require Labeling Disposable Wipes. The district and water counsel built a large coalition of supporters for the proposed legislation, due to longstanding problems associated with wipes in plumbing, sewer mains, and wastewater treatment facilities. Key dates in the legislative process are below.

- Feb. 13: the bill was introduced in the Colorado Senate and assigned to the Business, Labor, & Technology committee.
- Mar. 7: Siri Roman and Kristin Moseley testified in support of the bill before the Senate committee, where it unanimously passed. Other testimony included South Platte Renew (Littleton / Englewood), Metro Water Recovery (Denver), Northwest Colorado Council of Governments Water Quality/Quantity Committee ("NWCCOG – QQ"), Fort Collins Utilities, and a University of Colorado economics student, among others. The audio recording of the Senate committee hearing is here.
- Mar. 9: passed second reading with amendments on the senate floor.
- Mar. 10: passed third reading on the senate floor.
- Mar. 11: introduced in the Colorado House and assigned to the Business Affairs & Labor committee.
- Mar. 16: Siri Roman and Kristin Moseley testified in support of the bill before the House committee, where it unanimously passed and was referred unamended to the House Committee of the Whole. Other testimony included the same as those in the Senate, as well as Arvada West High School students who have been working on social media awareness and various graphics to support the legislation. The audio recording of the House hearing is here.

We will provide an update at the board meeting.

**May 2, 2023, Regular Election**

Brian Thompson is coordinating all aspects of the upcoming board of directors' election and has met various election regulations including conducting the lot drawing, certifying the ballot, Secretary of State filings, and mailing absentee ballots to those eligible electors who have applied and are designated as a "covered voter" under the Uniform and Overseas Citizens Absentee Voting Act (UOCAVA). We will finalize election information on the district website after the board approves the Resolution designating the polling place locations.

**PFAS awareness**
As noted in the Operations Report, the customer notification letter was included in the March billing statements. We also issued a news release to help reach community members who do not receive a water bill. The news release is posted on our website in English and Spanish and they each have a link to the English or Spanish customer letter. The customer notification and news release generated a handful of inquiries that were answered by water quality staff.

The Operations Report also notes that the Environmental Protection Agency issued a proposed rule for PFAS substances on Mar. 14. This has generated national and regional media stories; a Colorado Sun story is linked and attached below.

**Colorado River Basin**
Nevada continues to aggressively seek ways to reduce overall water use, including legislation that could limit residential water use to 0.5 acre-feet per home annually. Two media reports are included below.

**District in the news**:
1. Mar. 13, Vail Daily: 'Atmospheric river' puts Eagle County under a winter storm watch this week
2. Mar. 7, Vail Daily: Local water providers begin sampling for PFAS chemicals
3. Mar. 4, Vail Daily: *Workers locate leak, restore water service in East Vail*
4. Mar. 1, Vail Daily: *Vail Mountain blows past last season's snow total*
5. Feb. 28, Vail Daily: *38 residences in East Vail without water service*
6. Feb. 17, Vail Daily: *Vail Fire responds to small gas spill in Gore Creek in West Vail*
7. Feb. 15, ERWSD news: Eagle Valley Trail Closure and Detour through Nottingham Park
8. Feb. 13, Aspen Journalism newsletter: The Runoff: No-flush wipes bill drafted

**Attachments** (or hyperlinks):
1. Mar. 15, Colorado Sun: What do the EPA's new PFAS "forever chemicals" limits mean for Colorado?
2. Mar. 14, EPA press office: Biden-Harris Administration Proposes First-Ever National Standard to Protect Communities from PFAS in Drinking Water
3. Mar. 15, Gizmodo: *Nevada Could Limit Water for Residents Who Use Too Much*
4. Mar. 15, Pew: *Facing Drought, Western States Seek to Deny Groundwater to Foreigners*
5. Mar. 15, Smithsonian: *How 'Daylighting' Buried Waterways Is Revitalizing Cities Across America*
6. Mar. 1, Las Vegas Review Journal: Southern Nevada Water Authority seeks power to limit water use

The Colorado Sun

**Trending:** Pat Schroeder, a Colorado congresswoman and pioneer for women's rights, dies

ENVIRONMENT

# What do the EPA's new PFAS "forever chemicals" limits mean for Colorado?

## Fed agency issues long-awaited mandatory drinking water caps for the toxic chemical. What should water agencies and consumers do?

Michael Booth

*3:08 AM MDT on Mar 15, 2023*

The Denver Fire Academy is visible through a fence from the road Thursday, Feb. 23, 2023, in Commerce City, Colo. Firefighting foam used here up until 2018 is suspected to be linked to the discovery of PFAS, or "forever chemicals" found in city's groundwater. (AP Photo/Brittany Peterson)

The EPA on Tuesday slashed the amount of PFAS "forever chemicals" allowed in local drinking water, amounting to strict marching orders for at least 20 Colorado communities that may need to add expensive filtration systems to remove the toxins.

Environmental groups and scientists hailed the draft EPA rules for containing damage from PFAS that finally arrived Tuesday after months of delays. PFAS encompasses a group of thousands of fluorinated chemicals employed in waterproofing and coatings and used in firefighting foam and consumer products from carpets to jackets to toothbrushes.

But the lowering of the drinking water standard from a guideline of 70 parts per trillion for some forms of PFAS to a hard-and-fast rule of 4 parts per trillion means some communities, including the **South Adams County Water and Sanitation District**, must boost their filtration. South Adams has said it needs a new $130 million treatment plant to eliminate PFAS and another industrial contaminant, and has bought clean supplies from Denver Water to supplement water served to 65,000 people.

**The Daily Sun-Up podcast | More episodes**


South Adams started plans for a new treatment plant in early 2022, district manager Abel Moreno said in an email. The agency has been "preparing for this announcement for some time and is proceeding full speed ahead with designing and obtaining funding for additional treatment facilities to meet the eventual maximum contaminant level," he said. The district's water does meet current standards in effect while the EPA finalizes the draft for the lower limits announced Tuesday, he added.

A state PFAS testing program, begun in 2020 and relaunched in 2022, has found "in the 20s" of communities that are far enough over the new EPA limit that they most likely need to take action, said Ron Falco, the Colorado Department of Public Health and Environment's safe drinking water program manager.

Advocates of tougher PFAS regulation urged the EPA and other federal agencies to make grants and low-cost loans available to local water districts to build new systems. Billions of dollars for drinking water were included in the Bipartisan Infrastructure Law and the Inflation Reduction Act.

"It is about time that the EPA takes action on PFAS but we can't stop here," said Chandra Rosenthal, Rocky Mountain director for the nonprofit Public Employees for Environmental Responsibility. "The Colorado public needs to continue to push our state agencies for stronger regulations and accountability for polluters who have contaminated our water and jeopardized public health."

Here are answers to some of the most common questions about PFAS circulating after the EPA announcement:

## What exactly is PFAS and why is it everywhere?

PFAS forever chemicals are a family of waterproofing and coating chemicals developed in the 1950s and '60s, and used in countless consumer and industrial products ever since. Many were developed by DuPont and 3M. The thousands of variants of PFAS are very good at fireproofing, waterproofing and lubricating. They have been used in rainproof hiking jackets, cosmetics and toothbrushes, carpets and linens, firefighting foam and protective gear. Some of the same qualities that make them useful also mean they take years to degrade, if at all. They tend to wash off airport runways, firefighting training centers and manufacturing plants and into waterways. Nearly every fish tested at popular Colorado fishing spots tested positive for PFAS.

**The Forever Problem:** "Forever chemicals," also known as PFAS, are an increasing toxic burden on Colorado and the United States, and The Colorado Sun is committed to coverage of public health threats posed by the ubiquitous consumer chemicals. We continue to follow threats from the chemicals to drinking water, croplands and wildlife, and the extensive costs required to clean them up.

**"Forever chemicals" about to get their first U.S. limits. Colorado families wonder if it will make their water safer.**
*5:56 PM MST on Mar 2, 2023*

**Jim Morrissey: It's no joke —PFAS have that singing fish belting out a sadder tune**
*2:10 AM MST on Jan 20, 2023*

**More "forever chemicals" found in Colorado and U.S. freshwater fish, study warns**
*3:06 AM MST on Jan 17, 2023*

**>> Find more of our coverage**

### What is the new EPA drinking water standard for PFAS?

The EPA now says the maximum contaminant levels for two common versions of the chemical, PFOA and PFOS, are 4 parts per trillion. The previous standard was only guidance for local agencies, and was set much higher at 70 parts per trillion. A handful of states preceded the EPA in setting a tougher standard. The EPA in March also set a "hazard index" for four other PFAS chemicals if their combined measurements pass a threshold.

The EPA has until 2024 to finalize the new drinking water standard, though it could do so before that, and activists want them to. The agency usually gives local water departments three to five years after that to come into compliance, said Melanie Benesh, vice president of government affairs for EWG.

### Are there PFAS forever chemicals in my town's drinking water?

PFAS are found almost everywhere, and so there's a decent chance they're in your drinking water. Colorado health officials sponsored a new round of testing for local water agencies in 2022, and found dozens that were showing over the new 4 parts per trillion EPA limit in drinking water. Towns with the worst problems are diluting contaminated sources with cleaner water, buying clean water from other agencies, and planning new treatment facilities. **You can check the state's map here, with embedded test results for your community and instructions on how to use the site**.

### Should I be filtering my tap water for PFAS?

Since the ultimate goal of the EPA is for zero detectable PFAS in drinking water, people who have checked the state database or their water agency's website and found contamination above 4 parts per trillion might want to consider additional filtration. Not all simple home filter pitchers, like the ones issued by Denver Water to reduce lead contamination, also filter out PFAS, so make sure to read all labels and literature carefully. An under-sink reverse osmosis system is the gold standard for home filtration, but it's also expensive. The Environmental Working Group, a nonprofit that has done extensive work on chemical hazards, **has a guide to home water filtration**.

### Should I get my blood tested for PFAS?

Human blood tests show 98% of the public has measurable amounts in their bloodstream. PFAS has been linked to damage to women's

reproductive systems, human immune systems and can cause cancer. Environmental advocates suggest that people who know they have been exposed through their work, or contaminated drinking water, or other means should talk to their doctor about getting tested.

The Colorado Sun

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### What is Colorado doing about PFAS?

Colorado health officials were among those pushing the EPA to hurry and set a mandatory drinking water standard, saying they might do it themselves as other states have done if the EPA did not act quickly. Colorado has used federal grants to help local water agencies test for PFAS, and continues to work with those with higher results to formulate plans for new filtration. Colorado is also helping to channel federal grants for clean drinking water infrastructure from bills passed by Congress in 2021 and 2022.

Colorado has an ongoing buy-back program for local fire departments to turn in tainted firefighting foam and replace it with more benign materials.

The state legislature last year ordered the phaseout of sales of certain consumer goods containing PFAS, and those restrictions will phase in during coming years. Consumer advocates want all states to go further and put pressure on manufacturers to stop using PFAS altogether whenever possible.

The Colorado Attorney General's Office has joined other states in suing manufacturers of PFAS to recover the costs of cleaning up water systems and treating human health problems associated with the chemicals.

"It's really important to get upstream so that the burden is not all on the drinking water agencies," Benesh said.

READ MORE

**Suncor will finally reopen after a 3-month closure. But will anything change for its neighbors?**

*3:40 AM MDT on Mar 15, 2023*

**Colorado's healthy snowpack promises to offer some relief for strained water supplies**

*4:02 AM MDT on Mar 14, 2023*

**Xcel Energy will cut Colorado bills again in April as natural gas costs continue to fall**

*3:08 AM MDT on Mar 14, 2023*

### What questions are yet to be answered about PFAS and human health?

Researchers are seeking more answers about the human health impact of long-term accumulation of PFAS in the bloodstream, and how much of those chemicals will ever leave the body once ingested.

Colorado officials are still working out rules for handling PFAS in biosolids, which are the fertilizing materials left over after city sewage is gathered and treated before releasing back into waterways. The biosolids have been spread for decades on farms on the Eastern Plains. In other states, biosolids from heavily contaminated watersheds have contributed to high PFAS levels in local groundwater. Colorado has said it will begin requiring biosolids testing before the material leaves sewage treatment plants.

Health departments are also figuring out how to cope with more PFAS waste created when drinking water or sewage water is filtered. The filters themselves will contain PFAS that doesn't break down, and they must be deposited in landfills that are designed not to leak into groundwater.

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# Planning for the worst: Agency seeks power to limit residential water use


SNWA seeks power to limit residential water use

By Colton Lochhead Las Vegas Review-Journal

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While western states work to hash out a plan to save the crumbling Colorado River system, officials from Southern Nevada are preparing for the worst — including possible water restrictions in the state's most populous county.

The Nevada Legislature last week introduced Assembly Bill 220, an omnibus bill that comes from the minds of officials at the Southern Nevada Water Authority.

Most significantly, the legislation gives the water authority the ability to impose hefty water restrictions on individual homes in Southern Nevada, where three-quarters of Nevada's 3.2 million residents live and rely on the drought-stricken Colorado River for 90 percent of their water.

"We've been repeatedly surprised by how quickly the situation on the river has degraded. We need to be considerably more aggressive in planning for those worst-case scenarios," the bill's lead sponsor, Assemblyman Howard Watts, D-Las Vegas, said in an interview. "We've got to look down the line."

The bill, if approved and signed into law in its current form, would stand as another substantial step toward conserving Nevada's tiny 1.8 percent share of the Colorado River, a river that has seen far less water in recent years than what current management plans allow to be taken out between the seven states that rely upon it for drinking water and agriculture irrigation.

That discrepancy between the water supplies and actual use from the river has sent the system's two major reservoirs — Lake Mead and Lake Powell — to historically low levels, and federal authorities say that without additional restrictions to curb water use across the basin, the river's ability to deliver water and generate hydropower at its major dams could be in jeopardy within just a few years.

Under the bill's current language, the water authority's board of directors could limit residential water use to as little as 0.5 acre-feet per home annually, or about 163,000 gallons.

The average single-family home in Southern Nevada uses about 130,000 to 132,000 gallons annually, according to the water authority, meaning that such restrictions would be felt more by the valley's larger residential water users.

'Scarce and precious resource'

Such restrictions could be approved by the authority if the federal government declares water shortages in the Colorado River — which has been the case for each of the past two years, and projections for Lake Mead's water levels show that shortage conditions likely will remain in place into the foreseeable future.

"It shows what Nevada is willing to do. It shows what urban communities are willing to do to conserve a scarce and precious resource in the arid West," Watts said.

Bronson Mack, spokesman for the water authority, said the change would allow the agency to be more flexible and responsive in dealing with water shortage situations, especially if conditions along the river degrade to a point where the federal government was forced to impose restrictions across the entire basin and significantly limit water deliveries.

The Bureau of Reclamation is currently reviewing various proposals to cut water use along the river by as much as 25 percent for the next several years — reductions it says are needed to keep Lake Mead and Lake Powell from crashing amid further drought and protect critical infrastructure at the reservoirs' respective dams.

Nevada, Arizona, Colorado, Utah, New Mexico and Wyoming jointly laid out a proposal that aims to share the pain of the reductions between the lower basin states, while California, the lone hold-out from that group, issued its own proposal that puts a heavier burden on Nevada and Arizona while protecting California's senior water rights.

The Bureau of Reclamation is expected to release a draft of its analysis in April and a final version by August, which is also when the agency typically announces water reductions under shortage conditions for the basin states.

But the Nevada Legislature only meets regularly every two years, meaning that barring a special session being called, lawmakers would not be able to address the issue until 2025.

"That's not going to wait until the next legislative session," Mack said. "We want to get this type of authority in place now in case we have to implement something like that in the future."

Need for change

Kyle Roerink, executive director of the Great Basin Water Network, said the types of residential water restrictions included in the bill clearly target the top water users in the valley — a group the water authority has aggressively tried to curb in recent months. Starting this year, the Las Vegas Valley Water District has a new water rate structure that includes substantial fees targeting the top 10 percent of its customers in hopes of getting them to lower their water use.

"I honestly think that provision is meant to send a signal to everyone that if you think that you are immune to the actions of the water authority protecting the system, you are sadly mistaken," Roerink said.

He added that people are struggling with the "need to change because of climate change."

"Changing people's behaviors is and always will be the hardest part of the job," he said. "Sometimes the only way you can change certain behaviors is to bring the hammer down."

The bill was sent to the Assembly Committee on Natural Resources and has not been scheduled for a hearing.

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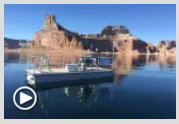
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