Open Space Advisory Committee

Applicant Package - Regular Member

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Term:14 Mar 2022 - 25 Jan 2025
Positions Available: 3

Number of applicants in this package: 1

- Anderson, Eric

Name: Anderson, Eric

Mailing Address: 4700 Wornath Road, Missoula, MT, 59804

Email Address: ericfanderson@yahoo.com

Board Name: Open Space Advisory Committee

Daytime Phone:: 406-552-8165

Alternate Contact Phone:: 406-728-4611

Street address zip Code: 59804

How long have you been a city resident?: My residence is in the County, but it is within the Missoula Urban Area Planning Region.

In which ward do you reside?: N/A

Are you registered to vote?: Yes

Current Occupation: Civil Engineer

Current Employer: WGM Group

Briefly describe your educational background: Bachelor & Master of Science in Civil/Environmental Engineering

List of community service experience: I have served on the Missoula Open Space Advisory Committee since 2016. During 2021, I served as Vice Chair for the Committee. I also serve on the board for MTB Missoula, which is a mountain bike club and trail advocacy organization in Missoula.

What is your interest in serving on this board, commission or committee?: I am a strong advocate for Missoula's open space program, and I want to stay involved in the planning process for future open space purchases, improvements, and protective easements. I am an avid mountain biker, hiker, and skier, so my biggest passion lies with the open space projects that involve new or improved recreational opportunities for Missoulians.

What special knowledge, interest, or experience do you possess that would qualify you for a position on this board commission, or committee?: As a civil and environmental engineer, I have a strong technical background in both public infrastructure and natural processes that Missoulians interact with on a daily basis. Many of my work-related projects are centered in the Missoula area, and I understand the local pedestrian, transportation, utility, and permitting systems very well. I believe my technical background has been an asset to the Committee during my past tenure, and it has allowed me to give useful well-rounded input to potential open space projects and improvements under consideration. In addition to contributing my engineering knowledge and general passion for Missoula's open space program, I bring a particular excitement toward new open space projects that give the public new and/or improved recreational opportunities. Whenever evaluating any new open space project; however, I believe that it is particularly important to carefully consider equity and fiscal responsibility of open space funds.

Reference 1 Name: Melissa Matassa-Stone

Reference 2 Name: John Stegmaier

Attachments:

- Eric Anderson - WGM 2021.pdf

Eric has over 16 years of experience in civil, water resource, and environmental engineering. He is a Certified Floodplain Manager and SWPPP Administrator/Preparer specializing in hydrology, hydraulics, storm water management, environmental permitting, stream stabilization and restoration, and irrigation design. He has served as manager on both urban and natural water resource projects on water bodies throughout western Montana. Eric is skilled at using FHWA's hydraulic engineering guidance for infrastructure design, such as publications HDS-5, HEC-15, HEC-20, and HEC-23. His expertise includes hydraulic model development utilizing a range of engineering models such as HEC-RAS, HEC-HMS, EPA SWMM, InfoSWMM, TR- 55, HY-8, Flowmaster, and Hydraflow Hydrographs.

ERIC ANDERSON, PE, CFM

SENIOR PROJECT ENGINEER

PROFESSIONAL EXPERIENCE

WGM GROUP, INC., Project Engineer, 8 years

RAVALLI COUNTY, Floodplain Manager and Road Supervisor, 3 years

WW ASSOCIATES, Project Engineer, 5 years

PROJECT EXPERIENCE

Beattie Street Trailhead, Helena, MT — Project Manager
Worked with the City of Helena to rehabilitate the Beattie Street Trailhead, including design of a 20-stall parking area, ADA accessibility, a stormwater bioswale, native landscaping, trail re-alignment, vault-toilet siting, MEPA-level environmental documentation, and picnic area with informational kiosk. Designed two blocks of urban street improvements including curbing, sidewalk, street parking, driveway reconfiguration, drainage improvements, and proper ADA accessibility measures on a steep 12% roadway. The project involved an extensive public involvement process.

CSKT Irrigation Reservoir Mapping, Flathead & Lake Counties, MT — Project Engineer
Assisted with logistics planning for topographic and bathymetric data collection to facilitate integration of datasets and creation of smooth digital bathymetric surfaces for 14 irrigation reservoirs. Assisted in the development of automatic procedures for generating highly detailed stage-storage and stage-area tables in AutoCAD,which were included as final deliverables. Provided QA/QC of final survey, mapping, and data table deliverables.

Missoula Public Works Standards Manual, Missoula, MT — Project Engineer
Assisting the City of Missoula with writing their first formal stormwater design standards. Performed detailed review of storm water regulations and technical design standards for all of the state's MS4s and adapted a custom set of requirements for Missoula. Working with the City's storm water utility director to vet and develop both administrative and technical content.

MDT Ice Box Canyon Highway Improvements (Hwy 35), Bigfork, MT — Project Engineer
Worked with a transportation engineering team to develop alternatives for providing storm water management for this 1.3-mile segment of highway near the urban fringe of

WGMGROUP

LICENSES/ CERTIFICATIONS

Professional Engineer:
Montana 21890
Virginia 43851

Certified Floodplain Manager

SWPPP Administrator/ Preparer

EDUCATION

M.S., Civil Engineering with Emphasis on Environmental Engineering, University of Virginia
2004

B.S., Civil Engineering, University of Virginia
2002

ERIC ANDERSON, PE, CFM

SENIOR PROJECT ENGINEER

Bigfork. Creative methods were developed to infiltrate, detain, and outfall stormwater along a tight right-of-way corridor with no natural receiving water. Eric was responsible for all hydraulics design tasks, including H&H model development in SSA, concept plan production, and cost estimates.

Douglas Creek Irrigation Diversion, Helmville, MT — Project Engineer
Provided design, permitting, and construction oversight services for the rehabilitation of two irrigation diversions. Both diversions were replaced with new modular precast concrete structures to improve functionality and efficiency. The remote location for construction equipment access and material delivery, prompted the unique design using precast modular concrete structures that could be easily placed by smaller machinery. The design also incorporated collapsible "jack legs" to support removable wooden check boards. The structure can be raised during irrigation season and lowered for spring flood flows. To monitor water usage and keep high in-stream flows, new Parshall flumes were incorporated into the design. Peak flow hydrology and structure hydraulics were examined to ensure proper sizing and function of the new structures during the annual range of anticipated creek flows.

Southgate Mall and Mary Avenue, Missoula, MT — Project Engineer
Worked with MRA and Southgate Mall to reconfigure the mall's parking lot and complete a 1,900-foot extension of an urban roadway to provide pedestrian improvements and a new mid-town transportation connector. Helped design 29 new raingardens to provide storm water quality treatment and infiltration of 100% of the roadway and parking lot drainage. Developed a custom soil media to ensure proper pretreatment of runoff.

900 Wisconsin Ave, Whitefish, MT — Project Engineer
Led drainage design and storm water management efforts on this 100 condo unit project that included green infrastructure design with integrated landscape and runoff conveyance features, two bioinfiltration basins, over 1,000 LF of storm drain, pre-treatment catch basins with SNOUT BMP's, and two large underground infiltration facilities comprised of large 60-inch and 84-inch perforated CMP. All channels/pipes, underground detention, and connections to existing storm drain were incorporated into a single SSA model for comprehensive analysis.

MDT Whitefish West, Whitefish, MT — Project Engineer
Worked with MDT on the storm drainage and permitting portions of this project to reconstruct approximately five miles of US Highway 93 beginning in downtown Whitefish and extending west to Twin Bridges Road. Performed hydraulic analysis in HY-8 for four culvert crossings, including analysis of potential floodplain impacts to Spencer Lake Zone A floodplain. Worked closely with local DNRC staff to develop a simplified methodology to determine the floodplain elevation based on adjacent road elevations and avoided a costly H&H model.

Wisconsin Avenue Improvements, Whitefish, MT — Project Engineer
Performed preliminary hydraulics assessment and developed drainage alternatives for pedestrian path and traffic improvements. Analyzed the capacity of the existing storm drain network and assessed the feasibility of system expansion to serve the new project.

Sand Creek Pond Feasibility, Yellowstone County, MT — Project Engineer
Assisted with the evaluation of suitable locations for a new 50-acre pond on Sand Creek.

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PROFESSIONAL AFFILIATIONS

Association of Montana Floodplain Managers

Association of State Floodplain Managers

CONTINUING EDUCATION

Presenter, Montana Storm Water Conference, 2018

Presenter, Association of Montana Floodplain Managers Conference, 2013, 2017, 2018

Presenter, Montana Association of Dam and Canal Systems Conference, 2016

Montana DEQ-8 Stormwater Training, 2016

USGS StreamStats Technical Training, 2016

Forester University: Fluvial Geomorphology Webinar, 2015

Association of Montana Floodplain Managers Annual Conference, 2010 - 2015

MT DEQ BMP 101: Stormwater Management During Construction, 2014

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The feasibility analysis considered soil suitability, geotechnical concerns, watershed yield, water rights, stream permitting, fish stocking, and construction costs. Provided initial field assessment and flow measurements to assist the feasibility analysis and verify predicted watershed yield.

Rumble Creek Diversion, Condon, MT — Project Engineer
Provided design, permitting, and construction logistics services for the rehabilitation of this diversion. Worked closely with a local metal fabricator to design a modular splitter structure to regulate and measure the amount of water flowing through the diversion. The diversion allowed the landowner to precisely control the amount of water at the split and use the existing water right more efficiently. The project resulted in higher instream flows in Rumble Creek to help satisfy downstream junior water rights. Peak flow hydrology and structure hydraulics were examined to ensure proper sizing and function during the annual range of anticipated creek flows.

Lower Beaver Creek Diversion, Malta, MT — Project Engineer
Provided design, stream permitting, and construction logistics services for the rehabilitation of this diversion. The diversion's massive 1,236 mi2 drainage area was a significant design factor because the structure was instream and needed to be able to pass flood flows without being damaged. Several methods were used to examine the peak flow hydrology for the watershed, including USGS Montana Streamstats techniques and stream gage analysis. Worked with a local precast concrete provider and metal fabricator to design a modular replacement system for the existing structure to allow more efficient use of the existing water right and increase the structure's safety and stability during flooding. Provided cost estimates for construction.

University of Montana Storm Water Study, Missoula, MT — Project Engineer
Provided technical oversight to an engineering team that helped develop management alternatives for UM's two outfalls to the Clark Fork River, an impaired waterway. Planning level hydrology and hydraulics of the entire UM campus were developed to determine runoff contribution. The primary objective was to identify the most cost-effective method to reduce runoff contributions and improve water quality to meet MS4 program goals.

Beaver Creek Irrigation Ponds, Phillips County, MT — Project Engineer
Provided feasibility assessment, final design, stream permitting, and construction logistics services for the rehabilitation of two dam outlet structures for instream ponds that ranged from 45 ac-ft to 120 ac-ft. Feasibility assessment included the evaluation of several outfall improvement solutions. The peak flow hydrology for the dams' massive 170 mi2 drainage area was carefully scrutinized because the design flow significantly affected the size and cost of the new outfall structures. Three different hydrologic methods were used to evaluate the hydrology along with detailed analysis of local gage data.

Helena Storm Water Master Plan Update, Helena, MT — Project Manager
Managed development of storm water models for both existing and proposed storm water components using InfoSWMM software. Provided detailed hydraulic modeling of 100+ miles of conveyances and 60+ large regional storm water management ponds. Evaluated model results to identify capital improvement projects to address flood risk, conveyance capacity, treatment performance, and storage. Completed the master plan report.

WGMGROUP

CONTINUING EDUCATION

MT DEQ BMP 201: SWPPP Administrator, 2014
Montana DNRC Floodplain Engineering 101 Course, 2012

Montana DNRC/FEMA Advanced HEC-RAS Modeling Course, 2011

Wetland Plant Identification, US Army Corps of Engineers, 2010ASCE Webinar -

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Pilgrim Creek Floodplain Analysis, Sanders County, MT — Project Manager
Assisted with site redevelopment near the non-detailed Zone A floodplain for Pilgrim Creek. Coordinated the floodplain cross section survey, generated peak flow watershed hydrology with USGS Montana Streamstats, and developed a HEC-RAS model to assess the backwater condition of a nearby bridge during the 100-year flood. Digitally overlaid floodplain elevations onto the site for planning and permitting. Coordinated with DNRC and Sanders County for model review and floodplain boundary approval.

Bitterroot River Streambank Stabilization, Ravalli County, MT — Project Manager
Designed and permitted 900 LF of bioengineered streambank stabilization utilizing a rootwad matrix, brush mats, live willow cuttings, and biodegradable fabrics. Coordinated field collection efforts of survey team, including planning efforts to identify critical grade breaks. Provided detailed documentation of floodplain and stream impacts for permitting. Obtained permit approvals from the U.S. Army Corps of Engineers, Montana Department of Environmental Quality, Montana Department of Fish, Wildlife and Parks, and Ravalli County.

Rock Creek Streambank Restoration, Missoula County, MT — Project Manager
Provided survey, design, and permitting assistance for a 500-foot stream re-alignment and bank restoration project, including the creation of a bioengineered bankfull bench to create riparian and aquatic habitat. Designed soft streambank stabilization to discourage the propagation of a new side channel during high water events, and incorporated large woody debris, fabric encapsulated soil lifts, and dense riparian planting. Assisted with survey coordination, HEC-RAS floodplain modeling, scour modeling, buoyancy modeling, and floodplain reporting.

Smith River Streambank Restoration, Meagher County, MT — Project Manager
Designed and permitted 900LF of stream bank restoration on the Smith River. Designed bioengineered elements, including dense native vegetation, fish habitat structures, biodegradable fabrics, and minimization of non-native materials. Coordinated survey, including full bathymetry, riffle identification, ordinary high-water mark, and floodplain cross sections. Enhanced both riparian and aquatic habitat along this blue ribbon fishery.

Beaver Creek Irrigation Reservoirs, Phillips County, MT — Project Engineer
Utilized bathymetric field survey to create storage vs. elevation relationships to prove volumetric capacity and support a water rights change application for five large (+60 ac-ft) irrigation reservoirs. Completed design plans for the reconstruction of two large earthen embankments and outlet works. Used aerial photos to identify shallow zones and augment areas of sparse survey to ensure accurate volume estimates.

Front Street Storm Water Preliminary Engineering Report, City of Helena, MT — Project Engineer
Provided preliminary design, report writing, and estimating for storm water management improvements to this large urban street corridor in downtown Helena. Developed detailed hydrology and hydraulics for the Front Street interceptor pipe, which receives drainage from the 13 mi2 Last Chance Gulch rural/urban watershed. Evaluated the complex hydrology using rainfall-runoff models and compared with USGS peak flow prediction equations. Evaluated the performance of the recommended street drainage design using HYDRAFLOW STORM SEWERS for hydraulic grade line analysis. Wrote the preliminary engineering report, including coordination and preliminary analysis of the water system and streetscape improvements along the same corridor.

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Storm Water Management Planning and Design, Charlottesville, VA — Project Engineer
Provided specialized expertise for numerous storm water management planning and design projects. Designed dozens of above and below ground detention and treatment projects, including new layouts and existing facility expansions. Developed urban watershed hydrology with suitable rainfall-runoff models, designed large treatment facilities, analyzed outfall adequacy, and developed final construction plans. Developed detailed erosion and sediment control plans.

Ormesher Streambank Restoration on the Clark Fork River, Missoula County, MT — Project Manager
Provided design and detailed construction drawings for bank restoration along the Clark Fork River. Completed permitting, including 318 Permit, 404 Permit, Floodplain Permit, and 310 Permit. Designed a combination of rock toe, rootwad toe, willow planting, fabric encapsulated soil lifts, and dense riparian revegetation. Assisted with construction support, quality control, and compliance assurance with the plans, specifications, and permits.

Potts Streambank Stabilization on Rock Creek, Granite County, MT — Project Manager
Provided design and permitting assistance for a hybrid bank stabilization project on Rock Creek. Designed a hybrid soft stabilization with rock toe to halt further erosion, increase riparian vegetation, and integrate into the existing aquatic environment. Modeled and evaluated stream flood forces such as scour, buoyancy, and shear to balance the design's robustness with visual appeal and ecosystem integration.

Wyoming Street Extension, Missoula, MT — Project Engineer
Designed storm drainage for 2,400 feet of new road, as well as channel relocation and culvert design for 500 feet of the Orchard Homes Irrigation Ditch, which serves over 170 water users. Assisted with construction oversight, contract administration, and quality assurance.

MDT Bearmouth Rest Area, Granite County, MT — Project Engineer
Provided floodplain permitting, design, and groundwater modeling. Created a 1D floodplain impact model in HEC-RAS for a one-mile reach to demonstrate that the project would have no impact on the Clark Fork River's 100-year flood elevations. Also provided assistance with wastewater and water design, including a high-efficiency treatment system, pump stations, pressure-dosed drainfield, variable frequency drive well pumps, delivery piping, pressure cell system, and water softener. Utilized a numerical groundwater model to evaluate contaminate transport and fate of backwash discharge from the new water softeners to ensure compliance with DEQ's water quality standards.

MDT Greycliff Rest Area, Greycliff, MT — Project Engineer
Assisted with environmental compliance by developing a SWPPP that included storm water management and erosion control to preserve riparian habitat and minimize construction impacts, which were critical due to the project's proximity to the Yellowstone River.

US Highway 12 Road Improvements, Bonner, MT — Project Engineer
Developed the storm water management design and prepared the MDT Final Hydraulics Report for this highway intersection project in Bonner, including pre- and post-developed

watershed hydrology, culvert analysis, dry well design, and detention/infiltration basin design.

DNRC Bright View Development, Kalispell, MT — Project Engineer
Determined the feasibility and layout of storm water treatment systems for planned commercial development on a 30-acre parcel. Analyzed regional and localized storage and treatment options, as well as low impact development measures such as infiltration facilities and mechanical treatment. Performed pond routing and watershed analysis using the SCS method to determine treatment volumes and allowable discharges from the site in accordance with City of Kalispell's strict storm water design standards.