

RECORD OF PROCEEDINGS

MINUTES OF A REGULAR MEETING OF THE BOARD OF DIRECTORS OF THE GREATROCK NORTH WATER AND SANITATION DISTRICT NOVEMBER 7, 2023

A regular meeting of the Board of Directors (referred to hereafter as “Board”) of the Greatrock North Water and Sanitation District (referred to hereafter as “District”) was convened on Tuesday, November 7, 2023, at 4:30 p.m. at the Reverse Osmosis Water Treatment Plant, 16373 Rayburn Street, Hudson, CO 80642. This District Board meeting was also held virtually via Microsoft Teams and by conference call. The meeting was open to the public.

ATTENDANCE

Directors in attendance:

John D. Wyckoff; President
Robert W. Fleck; Vice President
Brenda Adams; Assistant Secretary
Lisa Jacoby; Treasurer
Brian K. Rogers, Secretary

Also in attendance were:

Lisa Johnson, Shauna D’Amato, Jason Carroll, and Jill Giordano;
CliftonLarsonAllen LLP (“CLA”)
Mike Murphy; Ramey Environmental Compliance, Inc. (“REC”)
Nicholaus Marcotte, PE; Element Engineering LLC

ADMINISTRATIVE MATTERS

Disclosures of Potential Conflicts of Interest: The meeting was called to order. The Board discussed the requirements of Colorado law to disclose any potential conflicts of interest or potential breaches of fiduciary duty of the Board of Directors to the Secretary of State. The members of the Board were requested to disclose any potential conflicts of interest with regard to any matters scheduled for discussion at this meeting and incorporated for the record those applicable disclosures made by the Board members prior to this meeting in accordance with statute. It was noted that disclosures of potential conflicts of interest were filed with the Secretary of State for all directors, and no additional conflicts were disclosed at the meeting. Director Adams noted that she serves on the HOA Board for Box Elder Creek Ranch.

Agenda: The Board reviewed the Agenda for the meeting. Following discussion, upon motion duly made by Director Wyckoff, seconded by Director Rogers and, upon vote, unanimously carried, the Board approved the Agenda, as presented.

Board of Director’s Report: Director Wyckoff reported that the electrician will be out next week to wire the control panels in the meeting room at the Reverse Osmosis Treatment Facility.

District Manager’s Report: The Board reviewed the monthly Manager’s Report. There were no questions.

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2024 Insurance Renewal: The Board directed staff to work with Director Jacoby on the 2024 insurance renewal and to present final documentation to the Board at the December 5, 2023 Board meeting.

Worker's Compensation Insurance for 2024: The Board directed staff to bind worker's compensation insurance.

CONSENT AGENDA

The Board considered the following actions:

1. Approve the Minutes of the October 19, 2023 special meeting.
2. Ratify approval of the payment of claims for the period ending October 27, 2023, in the amount of \$2,606.47.
3. Acceptance of unaudited financial statements for the period ending September 30, 2023, Schedule of Cash Position updated as of October 20, 2023, and Inclusion Summaries.
4. Operations and Maintenance Activities Report.
5. Review meter installation report.
6. Review and consider approval of Resolution No. 2023-11-01 Annual Administrative Matters.

Following discussion, upon a motion duly made by Director Wyckoff, seconded by Director Rogers and, upon vote, unanimously carried, the Board approved the Consent Agenda items.

FINANCIAL MATTERS

Public Hearing on Proposed 2024 Budget; Resolution No. 2023-11-02: Adopting 2024 Budget, Imposing Mill Levy and Appropriating Funds: The public hearing was opened at 4:42 p.m. to consider the proposed 2024 Budget.

It was noted that Notice stating that the Board would consider adoption of the 2024 budget and the date, time and place of the public hearing was published pursuant to statute. No written objections were received prior to the public hearing.

No public was present, and the public hearing was closed at 4:42 p.m.

Mr. Carroll presented the 2024 Budget and mill levies to the Board.

Following review and discussion, upon motion duly made by Director Wyckoff, seconded by Director Jacoby and, upon vote, majority carried, the Board approved the 2024 Budget, subject to final assessed value received from the County and the outcome of Proposition HH, and adopted Resolution No. 2023-11-02 to Adopt the 2024 Budget, Imposing Mill Levy and Appropriating Funds (32.227 mills in the General Fund and 17.434 mills in the Debt Service Fund, for a total mill levy of 49.661 mills). Director Rogers voted in opposition.

ENGINEER'S REPORT

Mr. Marcotte presented the Engineer's Report to the Board.

CAPITAL PROJECTS UPDATES:

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Third Alluvial Well: Update was included in the Engineer's Report.

Evaporation Pond: Update was included in the Engineer's Report.

Reverse Osmosis Treatment Facility: Update was included in the Engineer's Report.

Capacity Analysis Prepared by Element Engineering LLC: Mr. Marcotte presented and reviewed his report with the Board.

2023 System Development Fee Analysis as Prepared by Element Engineering LLC: Mr. Marcotte presented and reviewed his report to the Board.

**OPERATIONS /
MAINTENANCE
MATTERS**

Operator in Responsible Charge ("ORC") Report: Mr. Murphy presented the ORC report to the Board.

**LEGAL
MATTERS**

Resolution No. 2023-11-03 Certifying Delinquent Water Service Fees and Charges to Adams County Treasurer for Collection: The Board reviewed the Resolution. Following review and discussion, upon a motion duly made by Director Jacoby, seconded by Director Fleck and, upon vote, unanimously carried, the Board adopted Resolution No. 2023-11-03: Certifying Delinquent Water Service Fees and Charges to Adams County Treasurer for Collection, as presented.

OTHER MATTERS

None.

**COMMUNITY
COMMENTS**

None.

ADJOURNMENT

There being no further business to come before the Board at this time, upon a motion duly made by Director Wyckoff, seconded by Director Rogers and, upon vote, unanimously carried, the meeting was adjourned at 6:08 p.m.

Respectfully submitted,

By _____
Secretary for the Meeting

DocuSigned by:
Brian Rogers
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Date: October 27, 2023
To: Greatrock North Water and Sanitation District, Board of Directors
From: Lisa A. Johnson, District Manager
Re: November 7, 2023 Manager's Report

Agenda Action Items

II.A. Consent Agenda

1. Approve the Minutes of the October 19, 2023 special meeting regular meeting.
2. Ratify approval of the payment of claims for the period ending October 31, 2023.
3. Acceptance of unaudited financial statements for the period ending September 30, 2023, Schedule of Cash Position updated as of October, 2023, and Inclusion Summaries.
4. Operations and Maintenance Activities Report.
5. Review meter installation report.
6. Adopt Resolution No. 2023-11-01 Annual Administrative Matters.

I recommend approval of the consent agenda items.

III.A 2024 Draft Budget

The Board will conduct the public hearing regarding the 2024 budget. Staff has revised the budget based on feedback from the Board and staff. The versions in the packet include those revisions.

I recommend the Board adopt the 2024 budget and certify mill levies.

VI.A Resolution Certifying Delinquent Water Service Fees and Charges to Adams County Treasurer for Collection.

I will present to the Board the delinquent accounts eligible to be certified to Adams County for collection with 2024 property taxes.

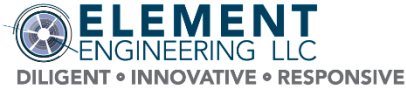
I recommend the Board adopt the Resolution.

Review of monthly Water Resumes and Other Water Related Matters

Attorney Poznanovic has reviewed the August resume and did not find any cases he would recommend the district oppose.

Update on other District Related Matters and/or Committee Meetings

Staff has spent time this past few weeks finalizing the draft 2024 budget.



ENGINEER'S PROGRESS REPORT

Date: November 7, 2023
To: Greatrock North Water and Sanitation District
From: Element Engineering
Job No. 0041.0001
RE: Monthly Engineers Report – **New Items Bold**

CAPITAL PROJECTS:

1. Water Treatment Plant Improvements - Construction

The Certificate of Substantial Completion has been provided to Moltz Construction. The date of Substantial Completion was set for October 6, 2022. The advertisement for final payment was posted as required and the final payment was issued. The end of the two-year warranty period is October 6, 2024.

2. Concentration Evaporation Pond

Element has reviewed all historic documents on the concentration evaporation pond and has contacted the subconsultant tasked with the concentrate line and pond grading design (CVL). The tasks necessary to complete design and permitting of the concentrate pond are as follows:

- Receive concentrate line and pond CAD files from CVL.
- Compile an Engineering Design and Operations Plan (EDOP), design plans, liner design, and specifications for the pond per CDPHE Section 9: Waste Impoundments.
- Finalize pond grading design and SWMP.
- Update concentrate line per request from developer and update easement exhibit.

Element has provided the district with a proposal to the district to complete pond design and CPDHE submittal (EDOP, plans, specifications). The EDOP, plans, and specifications will be to CPDHE for review and approval. After approval, the district will be granted approval for construction. CDPHE has strict quality control and construction documentation requirements including a construction QA/QC report that must be submitted after construction. Element can provide a proposal for pond bidding, construction observation, and construction QA/QC reporting at the appropriate time.

Element's proposal to complete the third concentrate pond and line has been approved by the district. We are currently working on the EDOP and plans. Also, we have provided a modified draft easement exhibit to Jay Scolnick for the revised concentrate line alignment.

As of August 29, 2021, Element continues to work on the concentrate pond design and EDOP. We have been coordinating with Jay on the concentrate line and have come to an agreement on the line location. We are finalizing what should be the last iteration of the concentrate line easement for signature by Jay. Our surveyor will require some field work for the easement in order to stamp the legal description. Also, there is additional survey required for the concentrate line design which will occur at the same time.

Additional survey field work was ongoing as of September 16, 2021. Element met onsite with the surveyor to confirm required items to be surveyed. Element held discussions about the potential to eliminate the proposed sump and pump in the proposed RO WTP if the concentrate line can be lowered. Element recommends any new concentrate main installation be 8-inch diameter SDR 35 PVC minimum.

Element has received the updated survey and has provided preliminary pond alternative layouts and costs as well as concentrate line profiles for the district's discussion at the October 26, 2021 work session. Upon a final decision for layout and pond location design documents will be created. Also, it is apparent that the concentrate line in Rayburn can be lowered, allowing the proposed sump in the ROWWTP to be removed and all drains go to the concentrate line.

Element was provided direction by the board to proceed with the west pond location and the gravity concentrate main running down Hudson Mile Road. Design work is ongoing with draft design documents expected to be complete in January. Element has reached out to Adams County to determine what permitting will be required for the project. A potential pre-application meeting with Adams County was requested.

Element has submitted the initial pre-application document to Adams County. A pre-application meeting with the county will be scheduled in the coming weeks based on the county's schedule. Work continues on finalization of the design. It is our goal to submit a draft of the design submitted to the board for review during the month of January.

A pre-application meeting with Adams County has been scheduled for Friday February 4, 2022 at 10:30 AM. This meeting will be held virtually. Element submitted progress plans on the concentrate pond to the district. We are now working to finalize the plans. The next step is to complete final internal edits and compile a stormwater management plan (SWMP) and finalize and submit the Section 9 Impoundment permitting report to CDPHE. This should be completed by the end of February to mid-March.

Element and CLA staff attended a pre-application meeting with Adams County. A detailed summary of submittal requirements was sent to the GNWSD board. In summary a Conditional Use Permit is required. The board approved Element to begin working on this submittal. Work is ongoing. We expect submittal of the conditional use permit and EDOP to Adams County and CDPHE in mid-March.

The public meeting for the conditional use permit is to be held at the April 5, 2022 board meeting. The required environmental study on the property is being completed by an Element subconsultant. Upon completion of the environmental study and public meeting, Element will submit the conditional use permit application to Adams County.

Element received the ownership and encumbrance report to research mineral rights owners to notify them (as required by Adams County). Also, we received the environmental report prepared

by Olsson Associates that is required with the Conditional Use Permit. Our final task is to finalize the EDOP and submit it to CPDPHE and Adams County as well as provide notifications to mineral holders. This is to be completed by the week of May 30, 2022.

The EDOP and Adams County submittal have been completed and submitted. The Adams County review fee has been paid by Element.

Element has followed up with agencies to determine who is the primary contact. We have not been assigned a planner or engineer yet, but this is likely to occur soon.

Our project has been assigned a planner at Adams County. The county has promised to expedite the review of the project. Element will be ready to answer any questions or comments on the proposed project.

We held a county comment review meeting with Adams County on September 16, 2022. Comments received are relatively minor and we are currently working on the response letter. All responses have been completed. Element is confirming the Adams County requirement for landscaping.

It is recommended that the district proceed with bidding the project under the Construction Manager at Risk (CMAR) procurement procedure. We have completed responses to all Adams County comments. Also we held a meeting with CDPHE to request either an approval letter or a list of comments to respond to. CDPHE has indicated they will send a brief list of comments. We anticipate having those during the week of January 30th, 2023.

The district approved the CMAR bidding approach at the March 7th meeting. Element is working with the district's attorney to compile an Owner-CMAR agreement. Upon completion of this agreement, the CMAR bid documents will be completed and advertised.

The bid package is complete and we have forwarded all items to the district council to review. The attorneys are working to finalize the Owner-CMAR agreement.

The county has requested some minor modifications to the grading which are being completed. We are finalizing that for final re-submittal to the county. Our next step will be the planning commission and board of county commissioners.

The district's attorney has provided both the Owner-CMAR agreement and the Owner-Contract agreement. The CMAR bid package has been advertised and the bid package has been assembled. The following is the bid schedule for the CMAR process:

RFP Release Date	June 2 nd at 4:00 PM
Non-Mandatory Pre-Bid Meeting	June 9 th at 10:00 AM
Last Day to Request Interpretations of the Documents	June 16 th at 4:00 PM
Proposals Due (via email to nmarcotte@elementengineering.net)	June 23 rd at 4:00 PM
Anticipated Design Phase CMAR Award	July Board Meeting

Element has finalized and re-submitted all documents to CDPHE and Adams County for permitting purposes. This includes all grading and drainage changes requested by Adams County.

The CMAR package for the Third Concentrate Pond advertised and bid. The district received two (2) proposals. Please see the attached summary and recommendation letter for a detailed analysis of the bids and a recommendation for award.

Element held a project kickoff meeting with PES and representatives from their subcontractor team on August 24, 2023. The meeting went well with discussion centering around the team's ideas for value engineering. While the entire project was discussed, detailed questions discussed were as follows:

- Will a 4-ft fence be acceptable rather than the currently specified 6-ft fence? This will save significant money given the length of the fence.
- Use of the existing concentrate pond water for compaction will save significantly on water haul costs from on offsite area.
- A 40-mil under liner instead of the currently specified 60-mil is requested to save money.
- A slightly re-balancing of dirt work will ensure no net import or export is required.

We are currently awaiting approval from both CDPHE and Adams County to proceed with construction. Adams County has indicated that our Conditional Use Permit Application has satisfied their requirements and they are working to schedule our project on the board of county commissioners and the planning commission meetings.

Adams County has scheduled our Planning Commission and Board of County Commissioner Hearings. These dates are as follows:

- **Planning Commission: October 25 at 5:00 PM**
- **BOCC: November 14th at 9:30 AM**

CDPHE has reviewed our most recent submittal and provided us with a list of additional questions. We are working on responding to that request for information with a return date of the end of October targeted.

3. Third Alluvial Well

Element will report items pertaining to the third alluvial well in this section.

Element met with the district's water resources engineer on August 12, 2021. It was discussed that the location of Alluvial Well 3 and 4 would likely be the best locations for the new alluvial well. Element has been requested to complete a construction and design cost estimate to tie each of these well locations into the existing raw water lines. This work will begin shortly.

The well locations 3 and 4 were determined to be the best locations as they produce a satisfactory amount of water and have better water quality than location 5, which tested very high in nitrates (> 20 mg/L).

A Basis of Design Report (BDR) must be submitted to CDPHE to add an additional water source. This BDR must include the results of extensive water quality testing. Two separate testing

batteries must be completed in two separate calendar quarters. Also, once drilled, the well will need to be tested to insure it is not under the direct influence of surface water.

No work this period.

It is suggested that the board continue discussions of adding the third alluvial well. With the construction of the new water treatment plant being finalized, both existing alluvial wells are required for operation. Currently there is no redundant alluvial source.

GENERAL ENGINEERING – ADMINISTRATION

Element has been coordinating closely with CLA to onboard general engineering services. Element, CLA and GNWSD held an initial onboarding meeting at Element offices on June 10, 2021. An additional onboarding meeting with REC has been scheduled on June 30th, 2021 at REC offices. We have received all electronic and hard copy files from MMI and have reviewed them to determine the sum of available records.

Element has completed cost estimates to support 2022 budget preparation. This included estimated general engineering (ops and admin) fees, capital project fees, and engineering construction administration fees. A meeting to review the proposed budget items was held on September 22nd at REC offices.

Element is coordinating the additional information (survey) and scoping items on the concentrate line and concentrate pond and line alternatives in the General Engineering – Administration job number.

Element presented options to the board on concentrate line and concentrate pond locations. See Third Concentrate Pond reporting for more information.

Element is working on the county permitting of the third concentrate pond. See third concentrate pond update.

Element provided draft General Engineering estimates and concentrate pond cost estimates for the 2023 budgeting period.

Element is currently working on budgeting and rate analysis updates for the 2023 calendar year. Also, we have been coordinating with the district's consultants on the Town of Castle Rock water court case.

Element is now meeting monthly with the district manager and operator to go over district related tasks, and make sure coordination and progress is ongoing.

Element completed a design schematic of the necessary work to replace the existing Rocking Horse Farm water storage tank fill valve. These exhibits are attached. It is likely the project will cost less than the statutory public bid requirement of \$120,000. Therefore, it is recommended that the district solicit an on-call contractor for a price to complete the work. HAO solutions will also need to coordinate electrical and control work for the new actuated valve.

Element assisted the district in completing an application for the CDPHE Technical Assistance Grant. This grant is for \$25,000 and is intended to support the district in funding a district-wide hydraulic model.

1. Box Elder Creek Ranch Subdivision

Element will report general administrative engineering items pertaining to the Box Elder Creek Ranch subdivision in this section.

No work this period.

2. Rocking Horse Farms Subdivision

Element will report general administrative engineering items pertaining to the Rocking Horse Farms subdivision in this section.

Element has coordinated with REC to complete the recommendation for final acceptance of the Rocking Horse Farms Pump Station Replacement Project. The project was completed on July 22, 2020, and has been successfully operating since startup. The 1-year warranty period has elapsed, and Element recommends final acceptance.

Element met with REC at RHF on January 21st, 2022 to discuss replacement of the RHF control valves. It was determined that an insertion valve could be installed downstream of the control valve to shut the tank off. A new electrically actuated gate valve could then be installed in the vault. It is recommended that two manual gate valves with wheels be installed on either side of the new actuated valve. This time was billed to General Engineering: Operations.

No work this period.

3. Greatrock North Subdivision

Element will report general administrative engineering items pertaining to the Greatrock North subdivision in this section.

No work this period.

4. Hayesmount Estates Subdivision

Element will report general administrative engineering items pertaining to the Hayesmount Estates subdivision in this section.

No work this period.

GENERAL ENGINEERING – OPERATIONS

Element will report on water accounting, use, water quality, and electrical usage, and pond levels in this section. We are working on on-boarding and coordination with REC so that we may obtain data for regular reporting.

Element met with REC on January 21st, 2022 to discuss the rocks in the concentrate line. It was determined that the line could be temporarily shut down (turn off WTP) and the line upstream of the control valve could be shut. The concentrate line could then be pumped out (water discharging to the adjacent concentrate pond) and the line could be excavated, opened, and the rocks removed. Upon removal the line would need to be replaced in the excavated area.

No work this period.

DEVELOPMENT SERVICES

1. Country Club Ranchettes Filing No. 1

Element has contacted Jay Scolnick and his contractor (Three Sons Construction) to set up a pre-construction meeting. The meeting is tentatively scheduled to be held onsite during the weeks of July 5, 2021, or July 12, 2021 depending on final construction permit issuance from Adams County. Three Sons Construction has started the submittal process with Element. We are reviewing submittals per the district's rules and regulations.

Element will discuss construction observation and management roles and responsibilities with REC and CLA to clearly define task responsibility between each entity.

Element will be responsible for onsite construction observation. Submittals have been received and reviewed. A pre-construction meeting was held on July 16th, 2021. Onsite construction work started on July 21st, 2021. Element will be providing full time observation for the first week, and scale back observation time if we feel the contractor is completing acceptable work. Element provided the district with an estimated number of hours for onsite work that included the pre-construction, observation, GPS services and final walkthrough.

Element has completed construction observation and oversight during construction. Adams County notified the developer (Jay) and their engineer (Manhard) that their fire hydrant design and installation was three feet too close to the centerline of the asphalt roadway. The hydrants are required to be moved, which will require a new pressure test. An exhibit of this relocation is attached to this board report.

Element inspected and coordinated work on the fire hydrant relocation.

Minor construction observation/coordination occurred during this reporting period. Initial acceptance will occur after the surface improvements are complete (pavement, etc).

Element was notified that paving would occur at the project during the month of December. Upon completion of surface improvements an initial acceptance walkthrough will be completed.

Element completed an initial acceptance walkthrough and compiled the attached punch list and closeout requirements. A letter was sent to the developer on June 23, 2022, and we are awaiting a response and required items.

Element has received a draft Bill of Sale and as-built documentation. We are waiting on final documents for initial acceptance.

We have final documents for Initial Acceptance and anticipate board approval during the February meeting. These documents have been submitted to the attorney for review.

Element is planning to GIS the new infrastructure in CCRF1 and upload it to the district's GIS software. Work should be completed during the month of June.

The GIS work for the Country Club Ranchettes Filing 1 work has been completed and the all linework and data added to the district's GIS system.

2. Country Club Ranchettes Filing No. 2

On Wednesday January 26th, 2022. Element met with the developer to discuss inclusion of CCR Filing 2. There were no specific engineering related action items immediately necessary at the meeting. When the inclusion packet is submitted, Element will complete necessary review tasks.

The inclusion agreement for CCR F2 has been submitted and Element is working with the district's consulting team to review and provide comments.

Element met with the district staff to review the inclusion agreement. During this review it was determined that a capacity analysis would need to be updated to document that the district has adequate capacity to serve CCR F2. This capacity analysis will be completed to ensure the inclusion can be adequately served by existing district infrastructure, or if additional infrastructure by the developer is required.

A district-wide capacity analysis is currently being worked on. This will assist in determining what, if any, capital improvements are necessary for the CCRF1 Inclusion Agreement.

The capacity analysis has been completed and submitted to the district for consideration. This capacity analysis is a district-wide model that should be updated with the addition of any new development. A handout summarizing this document is attached to this report.

3. Ridgeview Estates

This subdivision has gained Initial Acceptance.

No work this period.

4. Epic Estates

Element attended a meeting discussing water rights and potential water treatment for the proposed development.

Element attended an inclusion meeting at the CLA offices to discuss the Epic Estates inclusion process and needed information. We specifically requested water quality results from Epic's raw water wells. A sampling and testing battery of necessary information was sent to Epic Estates.

No work this period.

5. Horse Creek Retreat

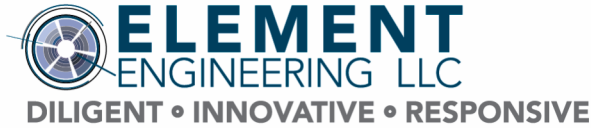
No work this period.

OTHER PROJECTS:

1. 2023 Tap Fee Update

The GNWSD board approved Element to compile an updated tap fee analysis. This work is currently being assigned to our staff and is being compiled. We are completing a district-wide capacity analysis prior to finalizing this tap fee analysis.

The tap fee analysis has been completed and submitted to the district for review and approval. A handout summarizing this document is attached to this report.



MEMORANDUM

TO: Greatrock North Water and Sanitation District
FROM: Element Engineering
DATE: October 2023
SUBJECT: Capacity Analysis Summary

Greatrock North Water and Sanitation District (GNWSD) worked with Element Engineering to complete a capacity analysis of the district's water system. The capacity analysis has been compiled to determine the existing capacity and demand of the six approved subdivisions within the GNWSD, as well as to determine if the system includes available capacity to serve additional development. The report includes recommendations for any improvements needed to serve the existing and proposed users.

A seventh subdivision is being planned for development, titled Country Club Ranchettes Filing No. 2. This development is interested in being served with potable water by the GNWSD. The capacity analysis will determine if the existing system is capable of serving this proposed subdivision.

The capacity analysis report should be updated and utilized for any future development considered by the district to determine if improvements to the potable water production, water storage, or pumping stations may become necessary based on proposed development water demands.

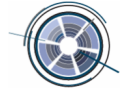
Capacity Analysis – Potable Water

The district blends approximately 10% RO permeate with 90% raw (chlorinated) water from a combination of ALV-1, ALV-2, UKA-1, and UKA-3.

This capacity analysis shows that the existing system is capable of meeting the average day and maximum day demand scenarios of the full buildout of the approved six subdivisions, but it requires approximately 19 hours of alluvial well operation, including 3.5 hours of RO treatment system operation.

This capacity analysis shows that the existing system is capable of meeting the average day and maximum day demand scenarios of the existing system with the proposed CCR Filing No. 2 demand, but it requires approximately 21.5 hours of alluvial well operation, including 3.5 hours of RO treatment system operation.

The number of system operation hours required to meet both the existing demand scenarios as well as the future demand considering the inclusion of the CCR Filing No. 2 demand is not recommended. The number of operational hours required does not allow for an adequate safety factor for emergency or maintenance situations. Additionally, the district is charged peak electric usage rates during peak hours. Therefore, the district wishes to only require system operation during the 16 non-peak hours each day to significantly reduce ongoing utility costs.



The district plans to drill additional alluvial wells to increase raw water capacity. Currently, the district is working to install a third alluvial well, which is expected to have a minimum flow rate of 150 gpm. This would increase the total alluvial flowrate to 435 gpm (sum of ALV-1, ALV-2, and proposed third alluvial well). With the inclusion of a new 150 gpm alluvial well, the system would be capable of maintaining the existing blend ratios and meeting the average day and maximum day demand scenarios of both the existing system as well as the included proposed CCR Filing No. 2 development with less than 16 hours of operation per day.

Capacity Analysis – Pumping Systems

The district's distribution system consists of three pumping stations: Box Elder Creek, Greatrock North, and Rocking Horse Farms. Each pumping stations draws from an onsite water storage tanks. The Box Elder water treatment plant, storage tanks, and pumping skid fill the satellite water tanks during off-peak hours.

The Box Elder Creek and Greatrock North Pumping Stations each have a capacity of 150 gpm with the three duty pumps at each station. The Rocking Horse Farms Pump station has a capacity of 200 gpm with the four duty pumps at the station. All pumping stations include a high service pump. Based on the existing demand and the proposed future demand considering the inclusion of CCR Filing No. 2, all stations are adequately sized.

Capacity Analysis – Storage

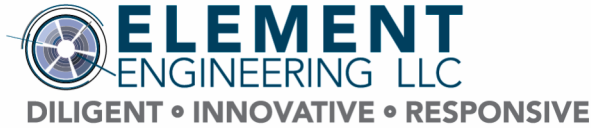
The minimum storage of a municipality is generally considered to equate to the maximum month water demand for one day, plus fire flow. Fire flow for a residential water system is designed for 1,500 gpm for 2 hours, equating to 180,000 gallons.

The existing system includes 1,550,000 gallons of potable water storage throughout the four water storage tanks. The existing water storage in the district at both the existing six subdivisions full buildout as well as with the addition of the proposed CCR Filing No. 2 is adequate.

Conclusions and Recommendations

The district should continue to pursue the completion of alluvial well number 3 (ALV-3). This additional raw water source will allow reduced system operation time and provide more flexibility for the operators.

No other system improvements are recommended to serve the existing six approved subdivisions or the proposed County Club Ranchettes Filing No. 2 subdivision.



MEMORANDUM

TO: Greatrock North Water and Sanitation District
FROM: Element Engineering
DATE: October 2023
SUBJECT: 2023 System Development Fee Summary

This memo summarizes the analysis to determine appropriate system development fees for inclusion in the District's Rules and Regulations. The analysis focuses on development fees for the accepted Country Club Ranchettes Filing No. 1 and the proposed Country Club Ranchettes Filing No. 2. The analysis should be updated for any proposed developments in the future.

The proposed system development fee is calculated based on appropriate costs for the following items:

- Raw Water Wells & Transmission Main
- Treatment
- Concentrate Impoundments
- Water Storage
- Water Pumping Stations
- Mechanical and Electrical Components
- Instrumentation and Control Components
- System Planning and Design
- Project Administration
- Contingency

The proposed system development fees for the accepted Country Club Ranchettes Filing No. 1 and the proposed Country Club Ranchettes Filing No. 2 are summarized below.

	Country Club Ranchettes Filing No. 1	Country Club Ranchettes Filing No. 2
Raw Water Wells & Transmission Main	\$ 3,125.68	\$ 2,812.50
Treatment	\$ 5,411.44	\$ 4,869.23
Concentrate Impoundments	\$ 10,184.46	\$ 9,164.02
Water Storage	\$ 5,054.77	\$ 4,548.30
Water Pumping Stations	\$ 2,360.43	\$ 2,123.92
Mechanical and Electrical Components	\$ 1,098.00	\$ 1,098.00
Instrumentation and Control Components	\$ 900.00	\$ 900.00
System Planning and Design	\$ 1,260.00	\$ 1,260.00
Project Administration	\$ 1,284.00	\$ 1,284.00
Contingency (10%)	\$ 3,067.88	\$ 2,806.00
Total	\$ 33,746.65	\$ 30,865.98
Proposed System Development Fee	\$ 34,000.00	\$ 31,000.00



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Greatrock North Water & Sewer District
ORC Report
November 7, 2023

Rocking Horse Farms Tank Fill Valve

The RHF Tank fill valve is experiencing ongoing issues with automatic control. REC and TLECC verified the issues are not electrical or SCADA control problems. A local CLA-Valve representative was contacted to schedule a site visit to inspect the valve to determine the best course of action moving forward. In the meantime, tank fill is being manually controlled by REC.

Update – Local CLA-Valve Representative, Pipestone Equipment, onsite to access RHF fill valve. Pipestone Equipment believes the control issues are due to an internal pressure loss through the internal components of the valve. REC is coordinating with Element Engineering to develop a plan to isolate the valve for inspection. Presently there is no isolation valve within the PRV pit, and no valves are indicated on plant drawings. Repair and/or replacement will need to take place during low demand season due to the inability to fill the tank while the valve is out of service.

Update – Site walk-through is scheduled for the first week of January with Element Engineering to review site layouts and develop plans for repairs.

Update – Site walk-thru completed with Element Engineering and Moltz Construction. After reviewing of site layout and plans it is confirmed there is no known isolation valve for the RHF tank fill valve. Element Engineering and REC developing plans for repair, but it is likely an insertion-type isolation valve will need to be installed before the replacement of the RHF fill valve.

Update – Element Engineering is developing the scope of work for Moltz Construction to repair.

Update – Element Engineering has completed drawings for valve replacement work.

RO Building Decommissioning

REC, Element Engineering, and Moltz construction are working together to locate the currently unknown source of water that is supplying back-pressure to the old RO treatment building. The backpressure source will need to be located and isolated prior to being able to complete the decommissioning of the old RO building.

Update 11/16/2022 – Altitude Leak Detection onsite to determine if BECR storage tank valves are leaking water when closed. Altitude Leak Detection was able to determine the south storage tank isolation valve is leaking water by when closed.

Update 4/4/23 - American West Construction and REC completed site walk to review scope of work for American West Construction to provide an estimate.

Update 5/15/23 – Northern Colorado Constructors and REC completed site walk to review scope of work for NCC to provide an estimate.

Update 7/20/23 – Estimate from Northern Colorado Constructors submitted for approval, to be reviewed at August 1, 2023 board meeting.

Update 8/24/23 – Signed estimate sent to Northern Colorado Constructors for full execution.

Update 9/6/23 – Estimates have been fully executed working with Northern Colorado Constructors to schedule work when demands are lower to be able to tank the south tank offline while repairs are completed.

Update 10/25/23 NCC scheduled to complete work the first week of November.

Augmentation

On 09/26/23 BBA Water requested augmentation pumping be set to 85 GPM. Augmentation set to 85 GPM on 09/26/23.

On 09/29/23 BBA Water requested augmentation pumping be set to 100 GPM. Augmentation pumping set to 100 GPM on 09/29/23.

On 10/6/23 BBA Water requested augmentation pumping be set to 70 GPM. On 10/9/23 augmentation pumping was set to 70 GPM.

On 10/11/23 BBA Water requested augmentation pumping be set to 100 GPM.
Augmentation pumping set to 100 GPM on 10/11/23.

Additional Activities

Met with NCC to develop scope of work for adding additional berms at evaporation ponds. NCC submitted proposal and was approved by the board. Work is scheduled for the first work of November.

Met with CLA, Element Engineering, and John Wycoff at REC office to review and discuss draft 2024 budget.

Water Quality

Month	ALV 1		ALV2		BECR		RHF		GRN	
	TDS mg/L	Hardness mg/L	TDS mg/L	Hardness mg/L	TDS mg/L	Hardness mg/L	TDS mg/L	Hardness mg/L	TDS mg/L	Hardness mg/L
Oct-23	1283	646	1280	632	119	16	162	26	174	27
Sep-23					140	18	135	21	142	22
Aug-23					256	73	173	17	267	77
Jul-23	1230	559	1265	554	303	92	217	84	340	63
Jun-23					147	17	174	22	152	14
May-23					181	36	213	30	189	139
Apr-23	1002	537	1055	537	216	36	253	34	233	134
Mar-23					229	69	505	166	442	165
Feb-23	1095	552	988	549	341	122	326	106	322	113
Jan-23					360	103	369	126	387	131
Dec-22					677	318	423	184	494	181
Nov-22					185	45	200	62	237	61
Oct-22	1080	525	924	526	385	157	449	179	456	202
Minimum	1002	525	924	526	119	16	135	17	142	14
Maximum	1283	646	1280	632	677	318	505	184	494	202
Average	1138	564	1102	560	272	85	277	81	295	102

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