MEETING AGENDA
WATER QUALITY MANAGEMENT COMMITTEE
March 22, 2023, 9:00 AM

Meeting Link: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YjEzODc5MWEtYmYzOi00Y2M4LWFjZjItMmc1NTZh%40thread.v2/0?context=%7b%22Tid%22%3a%22d6b2c89a1-3b96-49f6-acc4-bff4f836296%22%2c%22Oid%22%3a%226cb7bf62-7691-44d4-bc6e-4ed45296d253%7d

1. CALL TO ORDER / ESTABLISH A QUORUM / INTRODUCTIONS

2. AGENDA APPROVAL

3. PUBLIC COMMENTS/PRESENTATIONS

4. CONSENT ITEMS (These items will be acted upon as a whole, unless they are called up for discussion by a Board member or a citizen wishing to address the Board).
   A. Approval of the Minutes from 25 January 2023 Meeting (No meeting in February) ✗

5. ACTION ITEMS
   A. Site Application: Site Location for the Reagan Ranch Metro District Lift Station – Plummer Engineering
      (Project Link: https://ppacg-my.sharepoint.com/b:/g/personal/awerner_ppacg_org/EVQO_j6k18BtjIYDmdqI0YByQ4mFiiQe9sfsNC_DpuSg?e=VWFLoF) ✗

6. INFORMATION ITEMS

7. MEMBER ENTITY ANNOUNCEMENTS

8. MEETING SCHEDULE
   A. Next Meeting 26 April 2023 at 9 AM

9. ADJOURNMENT
MEMORANDUM

DATE: 25 January 2023
TO: WQMC
FROM: Ann Werner, Senior Military & Environmental Planner
SUBJECT: Meeting Minutes: 25 January 2023 at 9:00 AM

1. CALL TO ORDER / ESTABLISH A QUORUM / INTRODUCTIONS

Meeting called to order by Jonathan Moore, Chair, at 9:02 AM

Attendance:

<table>
<thead>
<tr>
<th>Full Name</th>
<th>Email</th>
</tr>
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<tbody>
<tr>
<td>Ann Werner*</td>
<td><a href="mailto:awerner@ppacg.org">awerner@ppacg.org</a></td>
</tr>
<tr>
<td>Jonathan Moore* (Chair)</td>
<td><a href="mailto:jonathanm@fsd901.org">jonathanm@fsd901.org</a></td>
</tr>
<tr>
<td>Jared Verner*</td>
<td><a href="mailto:jverner@ppacg.org">jverner@ppacg.org</a></td>
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<td>Kevin Brown*</td>
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</tr>
<tr>
<td>Jessie Shaffer</td>
<td><a href="mailto:jessies@woodmoorwater.com">jessies@woodmoorwater.com</a></td>
</tr>
<tr>
<td>Jim Heckman</td>
<td><a href="mailto:fsdmanager@fsd901.org">fsdmanager@fsd901.org</a></td>
</tr>
<tr>
<td>Mark Parker (VC)</td>
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</tr>
<tr>
<td>Brandon Bernard*</td>
<td><a href="mailto:b.bernard@securitywsd.com">b.bernard@securitywsd.com</a></td>
</tr>
<tr>
<td>Roger Sams</td>
<td><a href="mailto:rjsams@gmsengr.com">rjsams@gmsengr.com</a></td>
</tr>
<tr>
<td>JD Shivers</td>
<td><a href="mailto:jd.shivvers@whmd.org">jd.shivvers@whmd.org</a></td>
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<tr>
<td>Rachel Knobbs</td>
<td><a href="mailto:rknobbs@csu.org">rknobbs@csu.org</a></td>
</tr>
<tr>
<td>Eric Shea</td>
<td><a href="mailto:eshea@csu.org">eshea@csu.org</a></td>
</tr>
<tr>
<td>*In-person</td>
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</table>

2. AGENDA APPROVAL

Motion to approve: Mark Parker

2nd: Kevin Brown

Passed unanimously

3. PUBLIC COMMENTS/PRESENTATIONS

None

4. CONSENT ITEMS (These items will be acted upon as a whole, unless they are called up for discussion by a Board member or a citizen wishing to address the Board).

A. Approval of the Minutes from 28 September 2022 Meeting

Motion to approve: Jim Heckman

2nd: Brandon Bernard

Passed unanimously

5. ACTION ITEMS

A. Site Application: Site Location Amendment Request for Colorado Springs Utilities JD Phillips Water Resources Recovery Facility – Colorado Springs Utilities
Project overview by Rachel Knobbs, CSU. CSU has been operating a demonstration project at the JDPWRBF to improve biological nutrient removal via baffles installed within the JDWRBF aeration basin. CSU has monitored a consistent effectiveness in nutrient removal and more specifically total phosphorus removal and requests that the baffles be authorized as a permanent component of the JDPWRBF wastewater treatment works. She noted that this project has been heard by the SARC (4 January 2023) and the Lower Fountain Creek WQMA.

Motion to Approve: JD Shivers
2nd: Jim Heckman
Passed unanimously

Jonathan Moore: Commented that this process likely represents the future of wastewater treatment. Getting away from chemicals in the future.
Ann Werner: Overview of next steps. Heard by BOD on 8 February. Executive Director, Andy Gunning will sign the site application within a couple of days. Ann Will scan PDF and send to applicant.

6. INFORMATION ITEMS
7. MEMBER ENTITY ANNOUNCEMENTS
8. MEETING SCHEDULE
   A. Next Meeting 22 February 2023 at 9 AM
Motion to adjourn: Jessie Shaffer
2nd: Kevin Brown
Adjournment: 0912
The Pikes Peak Area Council of Governments
SITE APPLICATION REVIEW COMMITTEE

DATE: 10 March 2023
TO: SARC/WQMC
FROM: Ann Werner, Senior Military & Environmental Planner
SUBJECT: Meeting Minutes: Reagan Ranch Metro District Lift Station

1. CALL TO ORDER / ESTABLISH A QUORUM / INTRODUCTIONS

Meeting called to order by Jonathan Moore, Chair, at 10:03 AM

Attendance:

<table>
<thead>
<tr>
<th>Full Name</th>
<th>Email</th>
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<tbody>
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</tr>
<tr>
<td>Kat McGarvy</td>
<td><a href="mailto:katemcgarvy@elpasoco.com">katemcgarvy@elpasoco.com</a></td>
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<tr>
<td>Mark Parker (VC)</td>
<td><a href="mailto:parker@msan.co">parker@msan.co</a></td>
</tr>
<tr>
<td>Brandon Bernard</td>
<td><a href="mailto:b.bernard@securitywsd.com">b.bernard@securitywsd.com</a></td>
</tr>
<tr>
<td>Tiffany Miller</td>
<td><a href="mailto:tmiller@plummer.com">tmiller@plummer.com</a></td>
</tr>
<tr>
<td>Justin Fecteau</td>
<td><a href="mailto:jfecteau@csu.org">jfecteau@csu.org</a></td>
</tr>
<tr>
<td>Kelly Nelson</td>
<td><a href="mailto:kelly@theequitygroup.net">kelly@theequitygroup.net</a></td>
</tr>
</tbody>
</table>

1. INFORMATION ITEMS

A. Site Application: Reagan Ranch Metro District Lift Station. Presentation: Tiffany Miller, Plummer Engineering and Justin Fecteau, CSU

Project overview by Tiffany Miller, Plummer Engineering: The facility will consist of a below grade influent wet well, dry pit with two (2) pumps initially, four (4) at buildout once the Norwood development takes place, emergency wastewater storage tank, and other related equipment. The lift station will likely include an above grade enclosed operations building housing a standby generator and electrical gear. The lift station will convey wastewater through approximately 10,500 linear feet of new force main to an existing manhole located at Meadowbrook Parkway and Newt Drive. The wastewater will be treated at the Las Vegas Street Wastewater Treatment Facility (WWTF), owned and operated by CSU. The application was submitted to CDPHE in October of 2022 and they are expecting approval by the end of March with a final decision in June. Construction should begin in September with an anticipated start up date in November 2024.

Jonathan Moore: Have they looked at tying into the south via gravity to Lower Fountain Creek?

Justin Fecteau (JF), CSU: Project ties into CSU infrastructure. They have looked at this option, but a large diameter pipe would be necessary and the pipe would have to be deep since it drains across the airport. The lift station is the best option for now.


JF: Yes there is a generator and the 1 hours peak flow at buildout is consistent with what was done in the past. Overview of flow chart from the PowerPoint which shows at startup there will be a 4 hour overflow time period. There is 1 duty and 1 standby pump.

Jonathan Moore: Developer pays the costs associated with the lift station and CSU will take over running and maintaining the lift station.
Mark Parker: Speak to BLR’s future development and the Las Vegas WWTP.
JF: Current flow is 29 mgd. Rest of BLR will add 17-19 mgd and will be close to capacity of the LVWWTP at that point. Capacity is 50-55 mgd. They are considering alternatives which include LFWWTP or a new WWTP.
Kat McGarvy: Reviewed comments from EPC. Odor control will be by carbon scrubber and mixing of wet well.

Motion to Approve/move on to WQMC: Brandon Bernard
2nd: Mark Parker
Passed: unanimously

Site application will be heard at WQMC at their March meeting.

Motion to Adjourn: Mark Parker
2nd: Brandon Bernard
Passed: unanimously

Adjourned: 0928 AM
REAGAN RANCH METROPOLITAN DISTRICT NO. 1

SITE APPLICATION ENGINEERING REPORT

Reagan Ranch Lift Station

January 2023
Project #: 3473-001-01
Site Application Engineering Report
Reagan Ranch Lift Station

Reagan Ranch Metropolitan District No. 1
Colorado Springs, CO

3473-001-01
January 2023

Version 1

Plummer: 1221 Auraria Parkway | Denver, CO 80204
Prepared By: Tiffany Miller, PE
Reviewed By: Mark Dahm, PE
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<td>ORC</td>
<td>Operator Responsible in Charge</td>
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<td>PHF</td>
<td>Peak Hourly Flow</td>
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<td>PIP2</td>
<td>Planned Industrial Park</td>
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<td>PPACG</td>
<td>Pikes Peak Area Council of Governments</td>
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<td>PUD</td>
<td>Planned Unit Development</td>
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<td>Reagan Ranch Lift Station</td>
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<tr>
<td>UPS</td>
<td>Uninterruptible Power Supply</td>
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<td>WQMP</td>
<td>Water Quality Management Plan</td>
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<td>WWTF</td>
<td>Wastewater Treatment Facility</td>
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</table>
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1. Appendix A – Maps
2. Appendix B – Wastewater Planning Documents
3. Appendix C – Geotechnical
1 INTRODUCTION
The following report is the Site Location Approval (Site Application) Engineering Report for the Reagan Ranch Lift Station (RRLS) located in the southwest portion of the service area east of Stewart Avenue and Marksheffel Road. This report contains supplemental information that meets and exceeds the Colorado Department of Health and Environment’s (CDPHE) Site Location Approval Application requirements. The applicant is Reagan Ranch Metropolitan District No. 1 and the referenced project is located in Colorado Springs (City), El Paso County, Colorado.

The purpose of this report is to provide a description of the proposed RRLS, identify the service area, and demonstrate the applicant’s (or other agencies) ability to manage and operate the facility over the life of the project. The discussion herein supports the Site Location Approval application requirements per the CDPHE Implementation Policy for Regulation No. 22 –Site Location and Design Regulations for Domestic Wastewater Treatment Works 5 CCR 1002-22 (effective November 12, 2020) and WPC-DR-1 – Design Criteria for Domestic Wastewater Treatment Works (effective Jun 7, 2022).

1.1 PROJECT DESCRIPTION
The proposed RRLS will serve the service area located east of Stewart Avenue and Marksheffel Road. The service area is located entirely in El Paso County. The service area consists of parcels allocated for commercial and residential users. The parcels are currently undeveloped. Reference Figure 1 for the overall service area and phasing plan.

The proposed RRLS will serve undeveloped parcels currently planned as Planned Unit Development totaling approximately 340 acres. New collection systems will be installed to convey wastewater by gravity from these undeveloped parcels to the RRLS as development continues.

The RRLS facility will generally consist of a below grade influent wet well, below grade dry pit with four (4) pumps (two (2) initially, four (4) at buildout), emergency wastewater storage tank, and other appurtenances as needed. While the more specific engineering details are generally undetermined at this phase of the project, the RRLS will likely include an above grade enclosed operations building housing a standby generator and electrical gear. The engineering design will be required to meet the requirements of the Colorado Springs Utilities (CSU) Water Line Extension and Service Standards (LESS) for lift stations and wastewater force mains.

The RRLS will convey wastewater through approximately 10,500 linear feet of new force main to an existing stub-out and manhole located at Meadowbrook Parkway and Newt Drive. The wastewater will be treated at the Las Vegas Street Wastewater Treatment Facility (WWTF) which is owned and operated by CSU.
Additional Residential Units to be served:
- Add’l 140 ac Norwood est. – 1,120 SFEs
- Add’l 38 ac Norwood est. – 304 SFEs

Total PBC approved in Concept Plan
- 68.93 ac
- 25% lot coverage

Total Residential Units – 1,946 SFEs

Approx. 38 acres to be served by south lift station
Assume 8 units/acre

Approx 140 acres to be served by lift station
Assume 8 units/acre
1.2 OWNER/APPLICANT INFORMATION
The Applicant and their Representative are the entities responsible for planning and construction of the proposed RRLS and force main facilities. CSU will take over the operation and maintenance of these facilities upon final completion and commissioning.

The name and address of the Owner/Applicant is as follows:

Applicant: Reagan Ranch Metropolitan District No. 1
Applicant’s Representative: Kelly Nelson, Development Manager
Address: 90 South Cascade Avenue, Suite 1500, Colorado Springs, CO 80903
Email: kelly@theequitygroup.com
Phone: (719) 400-7320

2 SITE AND ENVIRONMENTAL PLANNING

2.1 SITE LOCATION
The RRLS will be located within the Reagan Ranch development area. The proposed site location is in Section 21, Township 14 South, Range 65 West of the Sixth Principal Meridian, County of El Paso, State of Colorado. The physical location of the site is east of Stewart Avenue and Marksheffel Road, Colorado Springs, CO. The approximate northing and easting of the lift station is 38°49'27.97"N (38.824436) and 104°40'52.99"W (-104.681386), respectively.

2.1.1 Land Use & Zoning
The land use and zoning within a 1-mile radius of the RRLS encompasses portions of Colorado Springs and El Paso County. Colorado Springs zoning for the proposed service area is entirely Planned Unit Development (PUD) with Airport Planned Development (APD), Planned Industrial Park (PIP2), Office Complex (OC), Single-Family Residential (R1-6), and Multi-Family Residential (R5) classifications within the 1-mile radius. El Paso County zoning is entirely Commercial Airport. The Zone Maps from Colorado Springs and El Paso County are provided in Appendix A.

2.1.2 Domestic Wells, Drinking Water Intakes
Maps showing locations of domestic wells and drinking water intakes within a 1-mile radius of the RRLS are provided in Appendix A. The maps indicate there are no drinking water intakes and five (5) wells within a 1-mile radius of the proposed lift station.

2.1.3 208 Plan
The Pikes Peak Area Council of Governments (PPACG) is the designated 208 Planning Agency for El Paso County. The PPACG Water Quality Management Plan – 2010 Update (WQMP) is the approved 208 plan for the RRLS service area. Appendix A of the WQMP details the PPACG site application review process. The following entities are required to review, provide comments as necessary, and provide signatures for approval of this site location application:

- PPACG (Water Quality Planning Agency)
- City of Colorado Springs (City)
- El Paso County (County) – review not required, project inside City boundaries.
El Paso County Health Authority – review not required for lift stations.

The site location will be submitted to each agency for review. Signatures will be provided on the Regulation 22 Site Location Application Form upon receipt of approvals.

In accordance with Section 22.3(1)(a) of the Regulation 22 Implementation Policy, site location applications shall evaluate the following in relation to the approved 208 plan:

1) Consideration for consolidation:
   a) The need for the proposed RRLS is dictated primarily by local topography and the feasibility of conveying wastewater from the service area to the treatment works. Consolidation of this service area with any existing service areas is not feasible due to local topography.

2) Planning area boundaries:
   a) Refer to the service area map shown in Figure 1 for details on the service area boundaries, as well as the remainder of Section 2 for a detailed discussion of site location land use and zoning, impacts from local wetlands and floodplains, and local topography.

3) Population projections for planning area:
   a) Refer to Section 3.2 for a detailed discussion for flow and loading projections for the service area.

4) Treatment works service areas – Not applicable.

5) Treatment works location, sizing, and timing – Not applicable.

6) Appropriate effluent limitations, waste load allocations, and TMDLs, where identified – Not applicable.

7) Agreements among entities to implement the plan.
   a) Review and approval of the proposed site location by the required review entities is pending, signatures will be provided upon receipt of approval.

8) Other water quality related issues - None identified.

2.2 ENVIRONMENTAL PLANNING

2.2.1 Wetlands
The National Wetlands Inventory (NWI) indicates a freshwater pond approximately 1-mile from the proposed RRLS site. No other wetland features are identified. The site is not located within a Fish and Wildlife Service wildlife refuge area. Refer to Appendix A for the U.S. Fish and Wildlife Service National Wetlands Inventory map.

2.2.2 Floodplain
The nearest water body with Zone A (100-year floodplain) classification is the Big Johnson Reservoir, located approximately 4.6 miles south of the proposed RRLS site. The Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Map (FIRM) for the 100-year floodplain shows no impacts to the immediate or adjacent vicinity of the proposed RRLS. The FIRM map (Community-Panel Number 08041C0758G, December 7, 2018) and a map depicting local topography are attached as Appendix A.

2.2.3 Geotechnical and Subsurface Exploration
A geotechnical report and subsurface investigation has been initiated and a draft report will be submitted
upon completion. The draft borings are attached as Appendix C. While a report is pending for this specific site location, it is not anticipated that groundwater or existing soils will prohibit construction. If detrimental soils (i.e., expansive) are found during the site soils investigation, remediation efforts such as import fill and/or use of drilled piers/caissons to a stable material can be implemented. A final geotechnical report for this specific site will be provided with the forthcoming Basis of Design Report and final site application.

3 SERVICE AREA AND WASTEWATER RECEIVING ENTITY

3.1 WASTEWATER RECEIVING ENTITY

The CSU Las Vegas Street WWTF will be the receiving treatment entity for the RRLS’s service area wastewater. The Las Vegas Street WWTF is located at 803 E Las Vegas St, Colorado Springs, Colorado. The Colorado Discharge Permit System (CDPS) number for the facility is CO-0026735 which expired on May 31, 2020; it is Plummer’s understanding the permit is currently under an administrative extension from the CDPHE.

The proposed RRLS will be located approximately seven miles southeast of the Las Vegas Street WWTF. The lift station force main will terminate at an existing stub-out and manhole at Meadowbrook Parkway and Newt Drive. Refer to Figure 2 for the conveyance flow diagram.

The CDPHE Water Quality Control Division Regulation 22 Application Form, Wastewater Receiving Entity Certification, will be signed by CSU and will act as the statement confirming that 100 percent of the initial hydraulic and organic loading from the RRLS service area will be accepted and treated.

3.2 FLOW AND LOADING PROJECTIONS

The proposed RRLS will serve a 340-acre service area and will be located off Marksheffel Road near Stewart Avenue. All parcels within the service area are currently undeveloped. Figure 2 shows a flow diagram of the service areas, lift stations, and force mains.

![Figure 2. Service Areas Flow Diagram](image)

3.2.1 Land Use Projections and Hydraulic Loading Rates

The service area is entirely zoned as Planned Unit Development subdivided into various parcels planned for a combination of commercial and residential users as shown in Figure 1. Due to the uncertainty of the users that will ultimately occupy each parcel, it is not possible to utilize population projections or building square footages to determine flow and loading projections for the service areas. Therefore, an average daily flow rate per unit area is applied to each parcel depending on the planned use of the parcel, as identified by Matrix Design Group in Appendix B. The Matrix Design Group planning estimate data was used in the flow planning numbers populated and discussed below within this report. It should be noted
that flow from the Norwood Property, denoted in orange in the parcel map, is excluded from this site application due to capacity issues of the downstream gravity system (RE: CSU Reagan Ranch Lift Station TM). An amendment to the site application will be required to accommodate these flows and expand the proposed lift station. However, the emergency storage and wet well will be designed to handle these future flows once approved.

Table 1 indicates the planning design maximum month daily flow (MMDF) rates for each land use concurrent with historic CSU flow data and as outlined within the CSU Wastewater Master Facility Form.

### Table 1. Design Hydraulic Loading Rates

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Maximum Month Daily Flow</th>
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<tbody>
<tr>
<td>Residential – Single Family</td>
<td>162.5 gpd/unit</td>
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<tr>
<td>Commercial</td>
<td>1,300 gpd/acre</td>
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<tr>
<td>Industrial</td>
<td>2,000 gpd/acre</td>
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</table>

3.2.2 Reagan Ranch Lift Station Service Area Projected Hydraulic Loading

Anticipated flow rates for the RRLS service area are shown in Table 2. Maximum month daily flow rates were determined from the land use area and design hydraulic loading rates shown in Table 1. The peak hydraulic flow rate peaking factor of 3.35 applied to the MMADF was determined from the CSU Reagan Ranch Lift Station Review TM. This document is provided in Appendix B for reference. The anticipated MMADF produced by the RRLS service area is 0.462 million gallons per day (MGD), and the peak hydraulic flow rate to be pumped by the lift station (i.e., firm pumping capacity) is 1,075 gpm (1.548 MGD).

### Table 2. Projected Hydraulic Flow Rates

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Parcel Area (Acres)</th>
<th>No. of Units</th>
<th>MMADF</th>
<th>Maximum Month Daily Flow (MGD)</th>
<th>Peak Hydraulic Daily Flow (MGD)</th>
<th>Peak Hydraulic Flow (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>68.9</td>
<td>--</td>
<td>1,300 gpd/acre</td>
<td>0.090</td>
<td>0.300</td>
<td>208.5</td>
</tr>
<tr>
<td>Industrial</td>
<td>28.1</td>
<td>--</td>
<td>2,000 gpd/acre</td>
<td>0.056</td>
<td>0.188</td>
<td>130.7</td>
</tr>
<tr>
<td>Residential¹</td>
<td>--</td>
<td>1,946</td>
<td>162.5 gpd/unit (65 gpd/person; 2.5 persons per unit)</td>
<td>0.316</td>
<td>1.059</td>
<td>735.7</td>
</tr>
</tbody>
</table>

**Total:** 0.462 1.548 1,075

| Residential (Norwood)² | -- | 1,424 | 162.5 gpd/unit (65 gpd/person; 2.5 persons per unit) | 0.231 | 0.775 | 538.3 |

1) Due to the uncertainty of the residential development (single family vs. multifamily), this analysis assumed all planned units were single family to ensure the most conservative flow was accounted for.

2) Norwood is excluded from this site application, however is included in this table to showcase the additional flow that will go to this lift station in the future. The lift station (emergency overflow storage and wet well) will be sized to accommodate the total flow (1075 gpm +538.3 gpm).

The Las Vegas Street WWTF has a permitted hydraulic treatment capacity of 75 MGD with an estimated 2017 hydraulic loading of 29.5 MGD as noted within Table 1-2 of the Colorado Springs Utilities Wastewater
System Plan (March 2019). With the addition of the RRLS service area, the hydraulic loading to the plant is expected to increase to 29.96 MGD; or 39.9% of the total treatment capacity.

### 3.2.3 Organic Loading

No historical organic loading data is available for the service area. Due to the uncertainty of the type and size of commercial and residential users that are likely to occupy parcels in the service area, a typical high-strength domestic wastewater Biological Oxygen Demand (BOD) concentration of 360 milligrams per liter (mg/L) will be applied to the projected MMDF for each service area to produce a projected MMDF BOD loading in pounds per day (lbs/day). The average 30-day BOD value recorded at the receiving entity has been published as 360 mg/l per Table 5-5 of the Colorado Springs Utilities Wastewater System Plan dated March 2019. Table 3 shows projected MMDF BOD loading for the service area.

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Total MMDF (MGD)</th>
<th>Organic Loading (mg/L)</th>
<th>Organic Loading (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reagan Ranch</td>
<td>0.462</td>
<td>360</td>
<td>1,387</td>
</tr>
</tbody>
</table>

Per Table 1-4 of the Colorado Springs Utilities Wastewater System Plan (March 2019), the Las Vegas WWTF has a cBOD capacity loading of 123,800 lbs/day with an estimated 2017 loading of 88,700 lbs per day. With the addition of the RRLS service area, the cBOD loading to the plant is expected to increase to 90,087 lbs/day; or 72.8% of the WWTF capacity.

### 3.3 PROJECTED FLOW PHASING

Table 4 summarizes the estimated absorption schedule for the proposed development including when each development is anticipated to be brought online and when it is anticipated to be built out. A site application amendment will be required to accommodate the Norwood development and expand the pumping capacity of the lift station.

<table>
<thead>
<tr>
<th>Development</th>
<th>Online</th>
<th>Build-Out</th>
<th>Anticipated MMADF (MGD)</th>
<th>Anticipated MMADF (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential – Phase 1</td>
<td>2024</td>
<td>2026</td>
<td>0.051</td>
<td>35.321</td>
</tr>
<tr>
<td>Residential – Phase 2</td>
<td>2025</td>
<td>2028</td>
<td>0.051</td>
<td>35.208</td>
</tr>
<tr>
<td>Residential – Phase 3</td>
<td>2027</td>
<td>2029</td>
<td>0.037</td>
<td>25.729</td>
</tr>
<tr>
<td>Residential – Phase 4</td>
<td>2024</td>
<td>2026</td>
<td>0.035</td>
<td>24.488</td>
</tr>
<tr>
<td>Multifamily 1</td>
<td>2025</td>
<td>2027</td>
<td>0.075</td>
<td>52.361</td>
</tr>
<tr>
<td>Multifamily 2</td>
<td>2026</td>
<td>2028</td>
<td>0.067</td>
<td>46.493</td>
</tr>
<tr>
<td>Commercial</td>
<td>2025</td>
<td>2030</td>
<td>0.090</td>
<td>62.228</td>
</tr>
<tr>
<td>Industrial – Phase 1</td>
<td>2025</td>
<td>2028</td>
<td>0.056</td>
<td>39.000</td>
</tr>
<tr>
<td>Norwood</td>
<td>2026</td>
<td>2031</td>
<td>0.231</td>
<td>160.694</td>
</tr>
</tbody>
</table>
4  LEGAL SITE CONTROL

4.1 SITE CONTROL, LAND OWNERSHIP, AND EASEMENTS

The proposed RRLS and force main will be constructed entirely within the boundaries of the service area. The land is owned by Pikes Peak Investments LLC. A letter of commitment dated March 2021, states the Pikes Peak Investments LLC will convey a parcel of subdivided real estate to Reagan Ranch Metropolitan District No. 1 as required for the permanent lift station site upon approval of the CDPHE lift station application, a development plan and final plat. A copy of this commitment is provided in Appendix B.

5  EMERGENCY OPERATIONS AND MAINTENANCE

The proposed RRLS emergency operations and maintenance procedures will follow the requirements as outlined in CDPHE’s Regulation 22 – Site Location and Design Regulations for Domestic Wastewater Treatment Works and Policy WPC-DR-1 – Design Criteria for Domestic Wastewater Treatment Works as well as CSU’s Wastewater LESS. The following provisions for the facility’s design have been developed in accordance with the requirements of these documents.

RRLS will be protected from unauthorized entry with the use of lockable structures, hatches, and site fencing. Notification to operations staff will be provided via self-activated alarm system(s) in the event of intrusion, lift station power failure, pump failure, or high wet well water level.

Provisions will be made for emergency conditions including primary power failure; pump failure; force main breaching from directional drilling or other below grade construction activities; or any condition causing the backup of influent wastewater to emergency levels within the wet well.

5.1 GENERAL OPERATIONS AND MAINTENANCE

Ownership of the RRLS capital infrastructure will be transferred to CSU upon commissioning. General day-to-day facility operation and maintenances, identification of the Operator Responsible in Charge (ORC), and the terms and conditions for all ongoing operations costs (e.g., electricity, natural gas, etc.), will be provided by CSU.

5.2 SITE SECURITY

Site security will be provided via perimeter 8-foot security fencing with a locked access gate, locks on all lift station building access entry doors, and locks and intrusion alarms on all wet well and dry pit access hatches. Intrusions will be monitored and recorded, and alarms will be sent to CSU Wastewater operations staff. Locks will be provided on all electrical panels.

5.3 TELEMETRY AND ALARMS

A telemetry system will be provided that will notify CSU operations staff equipment of alarm and fault conditions. Alarms and notifications will be provided for main power failure, backup power generator fault condition, high wet well level alarm condition, pump fault condition from heat, moisture, and/or failure to start, intrusion sensor alarm, and uninterruptible power supply (UPS) fault condition.

5.4 EMERGENCY CONDITIONS

Per the requirements of CDPHE’s Regulation 22, Policy WPC-DR-1 and CSU’s Wastewater LESS, the lift station must provide an alternative backup power source, emergency overflow storage, and provisions for bypass pumping. These requirements will be met with the following design approach.
5.4.1 Emergency Back-Up Power
The proposed RRLS will have a primary source of power and an emergency backup generator installed within the lift station property. The generator will be sized to automatically start and operate all pumps and controls without loading the unit to more than 85% of its rated capacity and with a maximum voltage drop of 15% for a minimum of one hour at the peak rated flow of the lift station. The generator will be diesel or natural gas powered and located in an enclosed and lockable structure at grade which will include fuel systems, automatic transfer switch and lift station controls. The building containing the emergency generator and diesel storage tank will have an NFPA 704 placard indicating that diesel is stored inside (unless natural gas is used). In addition, dual force mains are proposed to ensure the lift station will convey wastewater in the event of either single force main failure.

5.4.2 Emergency Storage Volume and Emergency Response Times
In addition to the proposed backup power generator, the lift station will be equipped with an emergency overflow storage tank, sized to hold a minimum of 1 hour of the approved peak hour flow rate, allowing time for operations staff to respond and mobilize to the site in the event of a high level alarm. The high level alarm water level in the lift station wet well will be below the invert of the emergency storage tank, and the maximum liquid level within the emergency storage tank will be below the influent pipe to the wet well to prevent surcharging upstream wastewater service lines.

CSU estimates operator response time at approximately 1 hour. At a minimum, the emergency storage volume will be designed to hold 1 hour of PHF (1,613 gpm which includes the Norwood property).

6 MANAGEMENT AND FINANCIAL CAPACITY

6.1 MANAGEMENT CAPACITY
The proposed RRLS site is within the city limits of the City of Colorado Springs. CSU’s policy is to take over operation and maintenance of the infrastructure if it serves more than 1 customer; therefore, both the lift station and the force main will be owned and maintained by CSU. CSU will be responsible for operating, capital, and miscellaneous costs such as electrical, maintenance, equipment replacement, liability and pollution insurance, water, and other ongoing expenses.

The District will maintain ownership of the facilities throughout the duration of construction, start-up, and the interim period prior to commissioning and final acceptance by CSU. After startup, CSU and the Engineer of Record will inspect the facilities and determine if construction has been completed in accordance with the approved final design documents. At the time final acceptance is granted, ongoing ownership and operation and maintenance will be the responsibility of CSU. All future operations and maintenance will be overseen by the CSU’s operations staff.

6.2 FINANCIAL CAPACITY
The financial arrangements for engineering and construction funding are being negotiated by the Airport, City, CSU and the District. As of this date, Reagan Ranch Metropolitan District No. 1 is paying all costs of design & engineering, permitting, etc. The District anticipates having an agreement in place for the construction funding with the appropriate parties by January 2023.

6.2.1 Owner Capital Cost Requirements
The anticipated capital cost for construction of the lift station is approximately $8.0 MM USD (2022 dollars) and $3.00 MM USD for the force main, for a total estimated capital construction cost of $11.0
MM USD. These estimates have been developed from similar facilities bid within 2021 and 2022.

6.2.2 CSU Long Term Financial System and Responsibilities

CSU will be responsible for the long-term operation and maintenance of the facilities. Table 5 represents anticipated costs on a monthly and yearly basis.

<table>
<thead>
<tr>
<th>Item</th>
<th>$ Per Month</th>
<th>$ Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation (Electrical)</td>
<td>$1,200</td>
<td>$14,400</td>
</tr>
<tr>
<td>Maintenance</td>
<td>$1,200</td>
<td>$14,400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2,400</strong></td>
<td><strong>$28,800</strong></td>
</tr>
</tbody>
</table>

1) 10,000 kWh/month, $0.12/kWh, 11 hrs./day of runtime (ADF)
2) Estimates for general facility maintenance, equipment maintenance, replacement of parts, operator labor.

7 IMPLEMENTATION SCHEDULE AND SITE POSTING

7.1 IMPLEMENTATION SCHEDULE

An implementation schedule for the approval, design, and construction of the facilities is shown in Table 6. It is anticipated that CDPHE review times will not exceed 60 days each for the Site Application and final design. The final design will be submitted to the CDPHE concurrently or shortly after the approval of the Site Application from the local agencies.

<table>
<thead>
<tr>
<th>Activities &amp; Milestones</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posting of the Site</td>
<td>October 2022</td>
</tr>
<tr>
<td>Submit Site Application to CDPHE</td>
<td>January 2023</td>
</tr>
<tr>
<td>Site Application Approval</td>
<td>March 2023</td>
</tr>
<tr>
<td>Submit Final Design &amp; Basis of Design to CDPHE</td>
<td>June 2023</td>
</tr>
<tr>
<td>Final Design &amp; Basis of Design Approval</td>
<td>August 2023</td>
</tr>
<tr>
<td>Commencement of Facility Construction</td>
<td>September 2023</td>
</tr>
<tr>
<td>Start-Up and Commissioning of Facilities</td>
<td>November 2024</td>
</tr>
</tbody>
</table>

7.2 POSTING OF THE SITE

To notify the public, the District posted a sign at the property as shown below.
APPENDIX A
MAPS
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.
Zone Map 543
- El Paso County -
Development Services Department

Zoning Designations

- RS-20000: Residential Suburban (20,000 sq. ft.)
- RS-6000: Residential Suburban (6,000 sq. ft.)
- RR-0.5: Residential Rural (0.5 acres)
- RR-2.5: Residential Rural (2.5 acres)
- RR-5: Residential Rural (5 acres)
- R-T: Residential - Topographic
- CR: Commercial Regional
- CC: Commercial Community
- CS: Commercial Service
- C-1: Commercial
- C-2: Commercial
- R-4: Planned Development
- MHP: Mobile Home Park
- MHP-R: Mobile Home Park, Rural
- MHS: Mobile Home Subdivision
- RVP: Recreational Vehicle Park

** Indicates an obsolete designation

Supporting Data

- Highways
- Major Roadways
- Creeks - Perennial
- Creeks - Intermittent
- Section Corner Nodes
- Parcels
- Section
- Zone Map Boundary
- Incorporated Cities
- Pike National Forest
- Special Uses

Vicinity Map

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APPENDIX B
WW PLANNING DOCUMENTS
To: MMI Water Engineers, LLC

Re: Reagan Ranch Metropolitan District No. 2 Lift Station

March 17, 2021

Agenda Item 5A

Please accept this letter of commitment relating to the transfer of real property in support of the site location for the Reagan Ranch Metropolitan District No. 2 Lift Station.

Pikes Peak Investments LLC shall convey a parcel of subdivided real estate to Reagan Ranch Metropolitan District No. 2 as required for the permanent Lift Station site upon approval of the CDHPE Lift Station application, a Development Plan and Final Plat.

Danny Mientka
Manager
Pikes Peak Investments LLC

ACKNOWLEDGEMENT
STATE OF COLORADO
COUNTY OF EL PASO

Before me, a Notary Public in and for said County and State, personally appeared Danny Mientka, who acknowledged that he did sign the foregoing instrument and that the same is his free act and deed.

In testimony Whereof I have hereunto set my hand and official seal, this 17th day of March, 2021.

Signature of Notary Public

My commission expires on: 06-20-2022
Memorandum

To: Tiffany Miller, PE Plummer
From: Justin Fecteau – Colorado Springs Utilities Wastewater Planning and Design
CC: Kelly Nelson, The Equity Group
Date: 1/19/2023
Attachments: Wastewater Master Facility Form, Planning Map
Re: Reagan Ranch Lift Station

Background and Design Verification
The Reagan Ranch project has modified the original vision of 2 separate lift stations. Now, flow is planned to be consolidated at a single lift station, Reagan Ranch, that is planned to serve the area depicted on the planning map. Ultimate flow from the project has also been increased due to changes in envisioned land use. Build out flow from the lift station is now:

0.693 MGD Maximum Month Daily Flow
2.427 MGD design peak flow.

Based on conversations with the developer and the developer’s engineer, Colorado Springs Utilities understands this lift station will be planned for buildout conditions but will be constructed in incremental steps to follow the progresses of the Reagan Ranch development.

The first major break point for the project is 0.46 MGD average day flow. This breakpoint pushes the flow from the separately owned Norwood property to a future date. When the need for pumping above 0.46 MGD average day flow arises, an amendment to the Reagan Ranch Lift Station Site Application will be required.

Colorado Springs Utilities understands that there are additional smaller increments based on effective use of the force main(s) to be determined by the development engineer up to the 0.46 MGD breakpoint. The development engineer plans that an 8” force main will be used initially & a parallel 14” force main will also be installed alongside the 8” to support future loading.

First Break Point Design Flow is:

0.46 MGD average day

A suitable peaking factor for 0.46 MGD based on Colorado Springs Utilities Data is 3.35

0.46*3.35 = 1.54 MGD peak flow
Future Planning
The Reagan Ranch Lift Station is the current option to serve the area due to the topography and lack of available treatment capacity to the south through Banning Lewis Ranch.

The Reagan Ranch lift station will be planned to accommodate future Norwood uses i.e. the lift station will have adequate space for future pumps, wet well expansion, increased emergency storage, etc. These future expansions will require a Stie Application Amendment and a construction project to increase the station capacity.

The currently (1/2023) planned outfall of Reagan Ranch Lift Station is the interim 18” main at Meadowbrook Pkwy & Newt Dr.

Current (1/2023) average day flow in the 18” main = 0.65 MGD. The first break point design flow is expected to be conveyed by the 18” main.

Substantial wastewater infrastructure upgrades to support continued flow increases from eastern Colorado Springs are required to be in place by 2030. The capacity in the 18” main is a trigger point that precipitates the need for these large-scale upgrades. The installation of the Reagan Ranch lift station will likely accelerate the need for these upgrades. The timing impact to the upgrades due to the Reagan Ranch Lift Station is unknown. Colorado Springs Utilities will continue to monitor flow through the 18” gravity section and adjust planning timeframes accordingly.

Colorado Springs Utilities is reviewing wastewater strategies through our Banning Lewis Ranch Studies and Alternatives Analysis (SAA) project. The SAA will look at conveyance and treatment options for wastewater in eastern Colorado Springs which may affect the future large scale system configuration. The ultimate system configuration that is decided on from the SAA could affect the outfall location of Reagan Ranch. If the outfall location is changed, an amendment to the Site Application will be required to connect to a new location.

Summary
Navigating the installation of the Reagan Ranch Lift Station is challenging given the uncertain future and growth in the surrounding areas. To mitigate these uncertainties the following is summarized

1) Limit lift station flow to the first break point, 0.46 MGD. This allows initial development to begin and is planned to accommodate the proposed Reagan Ranch development. Expansion above this point requires a Site Application amendment, which allows for the reassessment of capacity and more clarity regarding future infrastructure.

2) Continue to monitor flow in the outfall 18” line and adjust timing for regional capacity increases as needed.

The steps for initiating the construction of the Reagan Ranch Lift Station are:
1) Obtain Site Location approval for the Reagan Ranch Lift Station. The flow for the Site Application will be 0.46 MGD average day. The Engineering Report will address the break point and planned configuration.

2) Design the Lift Station –
   a. The full buildout flow of 0.694 MGD will be accounted for in the spacing and configuration of the equipment and appurtenances.
   b. The first break point 0.46 MGD will be the limit for this design.

3) Obtain design approval from CDPHE and Colorado Springs Utilities.

4) Begin construction of the Reagan Ranch Lift Station.
Agenda Item 5A

Reagan Ranch Lift Station Capacity Map

28.08 acres  363,200 SF
office/light industrial

Total Residential Units—1,946 SFEs

Additional Residential Units to be served:
Add’l 140 ac Norwood est. – 1,120 SFEs
Add’l 38 ac Norwood est. – 304 SFEs

Total PBC approved in Concept Plan
68.93 ac
25% lot coverage

Approx 140 acres to be served by lift station
Assume 8 units/acre

Approx. 38 acres to be served by south lift station
Assume 8 units/acre

Figure 1 - Capacity Map
Wastewater Master Facility Form

Date: October 12, 2022
Project Name: Reagan Ranch Lift Station (formerly Reagan Ranch Lift Station No. 2)
Project Number (City Planning assigned file#):
Location (Street Intersection, indicate corner): East of South Marksheffel Road
Company: Plummer
Contact Name: Tiffany Miller
Phone Number: 720-774-6132
Mailing Address: 1221 Auraria Parkway Denver, CO 80204
Email Address: tmiller@plummer.com
Developer Name: Reagan Ranch Metropolitan District No. 1 - Kelly Nelson
Developer Email: kelly@theequitygroup.net
Lid of Connection (See our GIS portal wastewater layer): WW.186385

Development Type:
- Single Family Residential
- Residential (Duplex & Triplex)
- Apartments, Condominiums & Townhomes
- Hotels
- Industrial
- Commercial
- Other

LAND USE | AVERAGE DAILY DESIGN FLOW
---|---
Single Family (2.5 persons per unit) | 65 gallons per person per day
Multi Family (1.9 persons per unit) | 65 gallons per person per day
Commercial (includes elementary & middle schools) | 1,300 gallons per acres per day
Industrial (includes high schools) | 2,000 gallons per acre per day
Other | Provide Estimate

COMMENTS:

The total projected flow to the Reagan Ranch Lift Station is 0.694 MGD (MMADF) and 2.427 MGD (PHF).

1st Break Point Flow = 0.46 MGD 1.54 MGD 1.60 peak

Approval of this plan does not reserve capacity in the wastewater system until a building permit is obtained.
Approval of this plan does not represent approval of the wastewater collections system configuration or design.
The Developer shall be responsible for all wastewater collection system extensions required to serve the proposed development.
Re-approval of the wastewater master plan shall be required if:
- Any portion of the approved plan is modified
- Adjoining development occurs first
Agenda Item 5A

Accepted - Owner/Developer
☐ I understand that checking this box constitutes a legal signature confirming that I acknowledge and agree to the information and accuracy of the information provided.

Signature: [Signature]
Date: 10/12/2022

Accepted - Design Engineer
☐ I understand that checking this box constitutes a legal signature confirming that I acknowledge and agree to the information and accuracy of the information provided.

Signature: [Signature]
Date: 10/12/2022

Accepted - Colorado Springs Utilities
☐ [Signature]
Date: 1-19-2023

* APPROVAL OF THIS FORM IS CONTINGENT ON
APPROVAL/CONSTRUCTION OF THE REAGAN RANCH
LIFT STATION - REFER TO MEMO RE: REAGAN RANCH LIFT STATION (1-19-2023)

Attach site map to this form with the following information:
- Location and type of development proposed
- Surrounding existing conditions
- Schematic of the wastewater system
- Proposed connection location(s)

Email .pdf of map and form to: wwmasterplansubmit@csu.org

TO BE COMPLETED BY COLORADO SPRINGS UTILITIES WASTEWATER PLANNING AND DESIGN

SIGNATURES REQUIRED:
☐ No  ☐ Yes

MODEL DETERMINATION - Based on the information supplied
☐ NO WASTEWATER MODEL WILL BE REQUIRED
☐ A WASTEWATER MODEL WILL BE REQUIRED - Refer to Standards and Specifications

COMPLETE ONCE APPROVED MODEL IS SUBMITTED
Model submission date:

Based on Model information at the time of submittal:
☐ There are no downstream capacity issues
☒ Potential capacity issues were identified - REFER TO MEMO RE: REAGAN RANCH LIFT STATION (1-19-2023)

ISSUES IDENTIFIED:
APPENDIX C
GEOTECHNICAL
LEGEND:

- FILL
- SAND, SILTY
- BEDROCK, SANDSTONE

Drive sample. The symbol 32/12 indicates 32 blows of a 140-pound hammer falling 30 inches were required to drive a 2.5-inch C.D. sampler 12 inches.

Groundwater level measured at time of drilling.

Groundwater level measured four after drilling.

Indicates depth where the test hole caved during drilling.

NOTES:

1. The borings were drilled September 22, 2022 using a 4-inch diameter, continuous-flight auger and a CME-55, truck-mounted drill rig.

2. These logs are subject to the explanations, limitations, and conclusions as contained in this report.

3. Laboratory descriptions will be generated by GINT when laboratory data is imported.