

December 18, 2020



ENTECH
ENGINEERING, INC.

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El Paso County Parks & Recreation
2002 Creek Crossing Street
Colorado Springs, CO 80905

Attn: Greg Stachon

Re: Design Flow Rate
Oak Meadows & Pine Meadows
Fox Run Regional Park
El Paso County, Colorado

Dear Mr. Stachon:

The proposed renovation of existing composting facilities will require a new on-site wastewater treatment system. This letter provides design flow values based on comparable facilities.

El Paso County On-Site Wastewater Treatment Systems Regulations Section 8.6.A.4.a.2.i. allows for: design flow values and strengths for multi-family and commercial systems shall be determined from an analysis of flows from at least three comparable facilities or from the facility, if it is an existing facility. Metered water flows for inside use only shall be paired with actual use in units of persons present, meals served, or other units as appropriate so that an actual daily rate per unit can be determined.

Entech Engineering, Inc. obtained metered water flow data from the existing Warming Hut (restroom) located at Fox Run Park from El Paso County Parks in Colorado Springs, Colorado (Appendix A). The data was used to calculate recommended daily design flows.

El Paso County Parks provided metered water usage records over the past three years for the "Warming Hut" located in Fox Run Regional Park, north of the Pine Meadows area and northeast of the Oak Meadows area. The last year (projected for a full year) was used to determine the recommended design flow.

The Warming Hut has 3 toilets, 1 urinal, and 3 sinks. The Oak Meadows and Pine Meadows Restrooms each have 4 toilets, 2 urinals, and 4 faucets/sinks. The Oak Meadows and Pine Meadows Restrooms each have 30 percent more fixtures than the Warming Hut. Based on the proposed fixtures, increasing the daily usage at the Warming Hut by 30 percent for each of the restrooms is recommended. The daily flow for each is approximately 353 gallons per day. To extend the life of the field, we recommend the proposed absorption field(s) be designed for a combined daily flow rate of 1,950 gallons per day. This will allow for the facilities to be used as the population in the area continues to grow and park usage increases.

The septic tanks for each restroom should be a minimum of 2,000 gallons (two compartments) to provide the recommended 48-hour holding capacity.

El Paso County Parks & Recreation
Design Flow Rate
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We trust this has provided you with the information you required. If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Reviewed By:



Robert P. Jaquet, E.I.

JCG/rpj

Encl.

Entech Job No. 201776
AA Projects/2020/201776 ltr-flow rate



Joseph C. Goode, Jr., P.E.
President



TABLE

TABLE 1
Design Flow Determinations

Warming Hut Flows Provided by El Paso County Parks		
Year	Gallons	
2018	11,370	Measured
2019	23,520	Measured
2020 (Jan.-Oct.)	33,860	Measured
2020	40,632	Projected

- While the park is open year-round, the main usage is May through October.
- For purposes of calculating design flows for the new facility, a 5-month major use window was used.
- Daily flows were increased 30% for the fixture count in the Pine and Oak Meadows facilities. With their main use being on weekends, the daily flow was calculated based on days of use per month.
 - Daily flows existing Warming Hut (based on 5 month) – 271 gpd
 - $40,632 \text{ gallons} \div 5 \text{ months} \div 30 \text{ days/month} = 271 \text{ gpd}$
 - Daily flows Park Meadows/Oak Meadows (30% increase for fixtures) – 353 gpd each restroom
 - $271 \times 1.3 = 353 \text{ gpd}$
 - Total Flow – 706 gpd
- To account for population growth in the area, increased park usage, and to extend the life of the field, a combined daily flow of 1950 gpd is recommended.

APPENDIX

El Paso County Parks: Water Usage Data

COMMISSIONERS:
 MARK WALLER (CHAIR)
 LONGINOS GONZALEZ, JR. (VICE-CHAIR)

HOLLY WILLIAMS
 STAN VANDERWERF
 CAMI BREMER

COMMUNITY SERVICES DEPARTMENT
 PARK OPERATIONS ~ COMMUNITY OUTREACH
 ENVIRONMENTAL SERVICES ~ VETERANS SERVICES ~ RECREATION/CULTURAL SERVICES

November 9, 2020

Robert Jaquet, E.I.
 Staff Engineer
 Entech Engineering, Inc.
 505 Elkton Drive
 Colorado Springs, CO 80907

Subject: OWTS Site Evaluation Oak Meadows Restroom (Con# 20-089)

Mr. Jaquet,

El Paso County Parks has retained your firm to evaluate an On-Site Waste Water Treatment System (OWTS) for the Oak Meadow Restroom at Fox Run Regional Park. In order to determine a combined daily flow rate for this facility, please see data for a comparable restroom at Fox Run Regional Park below. The 'Warming hut' restroom is located near the ponds to the north east of the Oak Meadows restroom.

Year	Annual Water Usage
2018	11,370 gallons
2019	23,520 gallons
2020 (Jan – Oct)	33,860 gallons

Table 1. Warming hut restroom annual water usage (gallons):

Men's:	Women's:
1 Urinal	2 Toilets
1 Toilet	2 Sinks
1 Sink	

Table 2. Warming hut restroom fixture count

Greg Stachon

Greg Stachon
 Landscape Architect
 Community Services Department
GregStachon@elpasoco.com



**Annual Water Usage at 2 El Paso County Park Restrooms
(gallons)**

	Baptist Rd. Restroom at Baptist Rd. trailhead	Warming Hut Restroom at Fox Run Regional Park
2018		11,370
2019	77,415	23,522
2020	50,524	32,040
2021	69,303	26,340
2022	60,824	24,980

*Baptist Rd. restroom has 2 toilets and 2 sinks. Open April-Sept.

*Warming Hut restroom has 3 toilets, 1 urinal & 3 sinks, open all year