

**FOWLER CREEK GUEST RANCH**  
**EXHIBIT 25**  
**MITIGATED USE ESTIMATES**

The applicant's guest consumption estimates for water and sewage were briefly included in the original Fowler Creek Guest Ranch submission. Based on responses to the original estimates and using suggestions from submitted comments, the applicant has created a Mitigated Use Estimates chart with equations that total the estimated amount of water and sewer usage for different areas of the guest ranch. The applicant has taken the estimations in these equations from Table 3-2: Guide for Maximum Daily Nonresidential Water Demand, found in the fourth edition of the Water System Design Manual released by the Washington State Department of Health in June 2020. Said manual can be found at: <https://doh.wa.gov/sites/default/files/2022-02/331-123.pdf>. The applicant has attached this table and has specifically shown where the exact estimations were taken. Some of the specific facilities included in the proposed guest ranch were not included in this table; in these cases, the applicant has used the next best estimate based on the provided information and the similar uses of the facilities in the table.

The applicant has added additional sources that further validate these estimates. These references are identified on the Mitigated Use Estimates chart by \*X. The sources are as follows:

\*1: <https://ehs.dph.ncdhhs.gov/oswp/docs/design/RV-ParksGuidance-10202017.pdf>

\*2: <https://www.aquasana.com/info/average-water-usage-in-the-united-states-pd.html>

\*3: <https://fatherresource.org/family-water-usage/>

\*4: <https://www.watercalculator.org/footprint/indoor-water-use-at-home/>

\*5: <https://water.usgs.gov/edu/activity-percapita.php>

\*6: <https://www.pollutioncontrolsystem.com/Uploads/images/Pages/>

[SEWAGE%20FLOW%20RATE%20ESTIMATING%20GUIDE%20Nov%202014\\_20170105.pdf](https://www.pollutioncontrolsystem.com/Uploads/images/Pages/SEWAGE%20FLOW%20RATE%20ESTIMATING%20GUIDE%20Nov%202014_20170105.pdf)

FOWLER CREEK GUEST RANCH - MITAGATED USE ESTIMATES				
Proposed Facility	Vehicles	People	Water per Unit/Use	Sewage per Unit/Use
30 RV Sites	30	60	50* estimated gallons x 30 estimated people = 1500 total estimated gallons per day *1	50 estimated gallons x 30 estimated people x 0.7+ total sewage use = 1050 total estimated gallons per day
B&B (5 Rooms)	5	10	50** estimated gallons x 10 estimated people = 500 total estimated gallons per day *2,*3	50 estimated gallons x 10 estimated people x 0.7+ total sewage use = 350 total estimated gallons per day
B&B (Dining)	0	10	10*** estimated gallons x 10 estimated people = 100 total estimated gallons per day *4,*5	10 estimated gallons x 10 estimated people x 0.7+ total sewage use = 70 total estimated gallons per day
Ranch House (7 Rooms)	6	14	40**** estimated gallons x 7 estimated people = 280 total estimated gallons per day *2,*3	40 estimated gallons x 7 estimated people x 0.7+ total sewage use = 196 total estimated gallons per day
Total	41	94		
Ranch Barn	75	200	5***** estimated gallons x 200 estimated people = 1000 estimated gallons per event *5,*6	5 estimated gallons x 200 estimated people x 0.7+ total sewage use = 700 estimated gallons per event

All astricks not identified with numbers reference information that is taken directly from Table 3-2: Guide for Maximum Daily Nonresidential Water Demand, found in the fourth edition of the Water System Design Manual released by the Washington State Department of Health in June 2020

\*This reduction of daily sewage to be treated is determined by rule WAC 173-539A-050(3)

**Table 3-2: Guide for Maximum Daily Nonresidential Water Demand<sup>1</sup>**

Type of Establishment	Water Used (gpd)
<b>Airport</b> (per passenger)	3 - 5
<b>Bathhouse</b> (per bather)	10
** <b>Boardinghouse</b> (per boarder)	50 **
*** Additional kitchen requirements for nonresident boarders	10 ***
<b>Camp</b>	
Construction, semi-permanent (per worker)	50
Day, no meals served (per camper)	15
Luxury (per camper)	100 - 150
* Resort, day and night, limited plumbing (per camper)	50 *
Tourist, central bath and toilet facilities (per person)	35 <sup>2</sup>
Cottage, seasonal occupancy (per resident)	50
<b>Club</b>	
Country (per resident member)	100
Country (per nonresident member present)	25
<b>Factory</b> (gallons per person per shift)	15 - 35
<b>Highway rest area</b> (per person)	5
<b>Hotel</b> (per person)	50
<b>Institution other than hospital</b> (per person)	75 - 125
Hospital (per bed)	250 - 400
<b>Lawn and Garden</b> (per 1,000 sq. ft., applied at 2-inches per week)	180 gpd per 1000 sf <sup>3</sup>
<b>Laundry</b> , self-serviced (gallons per washing per customer)	50
<b>Livestock Drinking</b> (per animal)	
Beef, yearlings	20
Brood Sows, nursing	6
Cattle or Steers	12
Dairy	20
Dry Cows or Heifers	15
Goat or Sheep	2
Hogs/Swine	4
Horse or Mules	12
<b>Livestock Facilities</b>	
Dairy Sanitation (milk room)	500
Floor Flushing (per 100 sq. ft.)	10
Sanitary Hog Wallow	100
<b>Motel</b>	
Bath, toilet, and kitchen facilities (per bed space)	50
**** Bed and toilet (per bed space)	40 ****
<b>Park</b>	
Overnight, flush toilets (per camper)	25 <sup>2</sup>
Trailer/RV no sewer connection (per trailer)	25 <sup>2</sup>
Trailer/RV connected to sewer (per trailer)	140 <sup>4</sup>
<b>Picnic</b>	
Bathhouses, showers, and flush toilets (per picnicker)	20

Type of Establishment	Water Used (gpd)
Toilet facilities only (gallons per picnicker)	10
<b>Poultry</b> (per 100 birds)	
Chicken	5 - 10
Ducks	22
Turkeys	10 - 25
<b>Restaurant</b>	
Toilet facilities (per patron)	7 - 10
No toilet facilities (per patron)	2 ½ - 3
Bar and cocktail lounge (additional quantity per patron)	2
<b>School</b>	
Boarding (per pupil)	75 - 100
Day, cafeteria, gymnasiums, and showers (per pupil)	25
Day, cafeteria, no gymnasiums or showers (per pupil)	20
Day, no cafeteria, gymnasiums or showers (per pupil)	15
<b>Service station</b> (per vehicle)	10
<b>Store</b> (per toilet room)	400
<b>Swimming pool</b> (per swimmer)	
Maintenance (per 100 sq. ft.)	10
<b>Theater</b>	
Drive-in (per car space)	5
Movie (per auditorium seat)	5 ****
<b>Worker</b>	
Construction (per person per shift)	50
Day (school or offices per person per shift)	15
<b>Footnotes</b> <sup>1</sup> Table adapted from <i>Design and Construction of Small Water Systems</i> (AWWA, 1984) and <i>Planning for an Individual Water System</i> (Assn for Vocational Instructional Materials, 1982), unless otherwise noted. <sup>2</sup> Add the 25-35 gpd per camper value to the 25 gpd where trailer/RV is without a sewer connection. <sup>3</sup> U.S. Bureau of Reclamation, Argimet, 2015, for Eastern Washington locations. <sup>4</sup> WSDSHS. 1983. <i>Sizing Guidelines for Public Water Supplies</i> , Washington State Department of Social and Health Services, Olympia, WA.	

### 3.6.2 Commercial, Industrial and Public Facility Demand

Water demands for commercial, industrial, and public facility categories range widely from less than, to significantly more than, a single-family residence. This is especially true for large farm irrigation needs or commercial and industrial processes.

Engineers can base MDD and PHD estimates for industrial water systems on customer contracted volumes (gpd or gpm), defined process needs, and/or analogous system data. Existing industrial and commercial users may have data logging capacity on their service meters, providing the design engineer with primary data on MDD and PHD that would be useful in designing for expansion of the system. If data is available and verified as accurate, it may be possible to develop a diurnal curve for each existing large nonresidential customer. This curve could help quantify PHD and identify when PHD