

Wastewater Flow Estimation Guidelines for Sewer Capacity Certification Requests

Gwinnett County Department of Water Resources

As part of the Sewer Capacity Certification Request, this table shall be used to estimate the total wastewater flows anticipated from a proposed development. The estimated wastewater flow should include flows from all planned facilities for the proposed development, or any change in flow due to change in operation or units. If development-specific flow estimate information is available, please include the calculations, data sources, and/or references with the submittal packet. GCDWR may consider such calculations in lieu of the flows calculated based on the table below. GCDWR will perform system evaluation to determine capacity availability as well as potential impacts on the sewer system, and identify potential improvements needed to meet regulatory compliance and target Level of Service.

Typical Developments

1. Determine the Annual Average Daily Flow (AADF) in gallons per day (gpd) for each category/facility included within the proposed development:
 - a. Identify the land use (residential, commercial, institutional, industrial, etc.), and the facility type (Column A) in the table below.
 - b. Identify the type of units (per square foot, per employee, etc.) shown in Column C based on the information available for the development.
 - c. Calculate the AADF based on the following formula (for commercial or community/institutional development, include the estimated flow based on potential maximum capacity for activities within the facility):

Number of units X Annual Average Daily Unit Flow (Column B) = Estimated AADF (gpd) for the proposed facility type

2. Sum the estimated flows for all the facility types proposed within the development to calculate the Total AADF (gpd). Mixed-use developments should include estimated flows for all applicable land uses and facility types.
3. Convert the Total AADF (gpd) for the development from Step 2 to gallons per minute (gpm) using the following calculation:
AADF (gpd) / 1440 = AADF (gpm)
4. Check to see if additional categories (Column D) should be included in flow calculations. Omission of categories may result in processing delays for the Sewer Capacity Certification.

Industrial or Batch-release Developments

1. For industrial facilities or developments that may include batch releases, include peak instantaneous flow from all potential processes. Specify whether the operation is for 8-hours, 24-hours, or other.

Developments Requiring Pump Stations (Private or Public)

1. If a pump station is required, whether public or private, the pumping rate must also be listed in the calculations. GCDWR shall evaluate the impact of the pumped flows on the sewer system. The Sewer Capacity Certification may be issued for the pumping rate rather than the flow generated.
2. A minimum 4.0 design peaking factor shall be applied to the AADF when designing new pump stations serving residential, commercial or community/institutional facilities. Pumping rates shall take into consideration the peak flows anticipated from a development.

Land Use Category and Facility Type		Annual Average Daily Unit Flow (gpd)	Per Unit	Additional categories that may be required
(Column A)		(Column B)	(Column C)	(Column D)
Residential Development and Related				
Residential Development Type	Apartment/Condo Studio or 1-bedroom	110	per unit	Pool, fitness center, clubhouse facilities
	Apartment/Condo 2-bedroom	155	per unit	
	Apartment/Condo 3-bedroom	205	per unit	
	Apartment/Condo more than 3 bedroom	250	per unit	
	Single Family Home	250	per unit	
	Townhome	250	per unit	
	Mobile Home	250	per unit	
	Senior Living / Assisted Living - 1 bedroom Apartment	110	per unit	
Group Home		110	per resident, max capacity	
Clubhouse/Neighborhood Amenity Center		50	per 1000 sq ft	Food service, office, pool, fitness
Country Club		175	per 1000 sq ft	Food service, office, gymnasium, pool
Pool/Aquatic Center		5 25	per swimmer, max capacity per employee	Food service, office, retail
Fitness Center		500	per 1000 sq ft	Food service, pool
Gymnasium		500	per 1000 sq ft	Food service, pool
Tennis, Soccer, Basketball Facility		10	per person, max capacity	Food service, pool

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Land Use Category and Facility Type	Annual Average Daily Unit Flow (gpd)	Per Unit	Additional categories that may be required
(Column A)	(Column B)	(Column C)	(Column D)
Commercial Developments			
Bank	175 25	1000 sq ft per employee	
Barber Shop	50 25	per chair per employee	
Beauty Salon or Spa Center (hair, nails and/or massage)	125 25	per station per employee	
Carwash	Automatic bay - with recycling	3500 25	Retail, office
	Automatic bay - without recycling	1350 25	
	Self-operating	350	
Flower Shop/Greenhouse/Urban Agriculture	*	per sq ft	(1)
Food Service	Restaurant (sit-down)	55	
	Restaurant (24-hr service)	110	
	Coffee Shop	55	
	Brewery	55	
		*	
	Dining Hall /Cafeteria	55	
	Bar/Tavern/Cocktail Lounge	50	
	Prep Kitchen (no customer service)	50	
	Walk-up Service/Carry-out	50	
	Drive thru/Drive-in	50	
	Food Truck	70	
	Kiosk/Stand	50	
Funeral Home	5 250	per seat per preparation table	
Gas Station	250	per gas pump	Food service, retail
Grocery/Food Store	Dry Goods	10	Food service, bank, retail
	Bakery	50	
	Deli/Meal Preparation	50	
	Meat Department/Butcher	75	
	Seafood Department	75	
	Produce Processing/Cutting	50	
Laundry	Coin-operated	400	
	Commercial	640	
Lodging	Campground/RV Parks	100	Office, pool, laundry Food service, pool, auditorium, bar, office, laundry
	Hotel/Motel without in-room Cooking Facilities	100	
	Hotel/Motel with in-room Cooking Facilities	110	
	Cabin/Cottage/Villa	155	
Office - General	175 25	1000 sq ft per employee (all shifts)	Food service, fitness center
Pet Care Centers	Pet Store	100	
	Animal Shelters	20	
	Veterinarian Center	500	
	Boarding Facility	20	
	Grooming Facility	500	
Retail Shops	Store	100	Food service
	Auto/Boat/RV Dealership	50	
	Kiosk	25	

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(Column A)	(Column B)	(Column C)	(Column D)
Commercial Developments (continued)			
Self-storage units	25	per employee (all shifts)	Residential, office, retail
Sports/ Fitness Centers	Bowling	125 25 per lane per employee	Food service, pool
	Fitness Center	500 per 1000 sq ft	
	Tennis, Soccer, Basketball Facility	10 per person, max capacity	
	Gymnasium	500 per 1000 sq ft	
	Skating Rink	5 per person, max capacity	
	Movie	5 per seat	
Theater	Drive-in	25 per bay	Food service
Vehicle Service/Repair		50 25 per 1000 sq ft per employee	Office, retail
Warehouse		25 25 per 1000 sq ft per employee (all shifts)	Food service, office
Institutional Developments/Community Facilities			
Auditorium/Arena/Concert Hall/Convention Center	10	per person, max capacity	Food service
Community Assembly/Banquet Hall	10	per person, max capacity	Food service
Educational Facilities	K-12 school	20 25 per student per teacher/employee	Food service, gymnasium, pool
	Boarding School/Dormitory	70 per student, resident employee	
	Tutoring Center	100 per 1000 sq ft	
	Day Camp/Daycare Center	20 25 per student per teacher/employee	
	University/College/ Technical School	20 25 per student per employee	
	Laboratory	*	
		per laboratory classroom	
Library	100 25	1000 sq ft per employee (all shifts)	Auditorium
Museum/Art Center/Visitor Center	2	per patron, max capacity	Food service, retail, office
Pool/Aquatic Center		5 25 per swimmer, max capacity per employee	Food service, office, retail
Park/Fairground/Outdoor Assembly	15	per total parking spaces	Food service
Sports/Fitness Centers	Bowling	125 25 per lane per employee	Food service, pool
	Fitness Center	500 per 1000 sq ft	
	Tennis, Soccer, Basketball Facility	10 per person, max capacity	
	Gymnasium	500 per 1000 sq ft	
	Skating Rink	5 per person, max capacity	
Transportation Terminal (Airport, bus, train)	5 25	per passenger per employee	Food service, retail
Worship Center	10	per seat, max capacity	Food service, banquet hall, gymnasium, office, educational
Emergency Services	Fire Station	70 per firefighter per shift	Detention center
	Police Station	25 per employee (all shifts)	
	Shelters	70 per resident, max capacity	
Detention Center	120 25	per inmate, max capacity per employee (all shifts)	Food service, office, gymnasium

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Institutional Developments/Community Facilities (continued)				
Hospital/Medical Care	Medical/Emergency	375 25	per bed per employee (all shifts)	Food service, office
	Mental Health	125 25	per bed per employee (all shifts)	
	Convalescent/Nursing Home	125 25	per bed per employee (all shifts)	
	Urgent Care Center	250 25	per bed per employee (all shifts)	
Office - General		175 25	1000 sq ft per employee (all shifts)	Food service, fitness center
Office - Medical/Dental		500 25	per 1000 sq ft per employee (all shifts)	
Industrial Developments/Batch Discharge Facilities				
Industry/Manufacturing		*	per industrial process per employee (all shifts)	Food service, office, warehouse
Batch Discharges		*	per maximum batch discharge per employee (all shifts)	Food service, office, warehouse
Other				
No Applicable Category		*	per plumbing fixture or process	(2)

* To be calculated individually based on specific usage

(1) If utilizing domestic water meter

(2) Fixtures = toilets, sinks, showers, etc.

**Do not include the Wastewater Flow Estimation Guidelines
in the Sewer Capacity Certification Request submittal.**