Wastewater System Design Criteria
Stakeholder Group Meeting

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E-mail Address for Comments

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PETITION TO ADD REHABILITATION CRITERIA
SUBCHAPTER A
ADMINISTRATIVE REQUIREMENTS
Previous Design Criteria

• Section to 217.1 (Applicability)
• Adding a section to clarify the grandfathering clause. Stating that the existing wastewater treatment system is subject to design requirements at the time of approval.
Definitions

• Maintenance
• Rehab
• Renovation
• Surcharge
• Auxiliary pump
• Gravity relief sewer
• Equalization basin

• Design Flow
• Grinder pump
SUBCHAPTER B
TREATMENT FACILITY DESIGN REQUIREMENTS
<table>
<thead>
<tr>
<th>Source</th>
<th>Remarks</th>
<th>Daily Wastewater Flow (gallons/person)</th>
<th>Wastewater Strength (mg/l BOD₅)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Residential</td>
<td>75-100</td>
<td>200-350</td>
</tr>
<tr>
<td>Subdivision</td>
<td>Residential</td>
<td>75-100</td>
<td>200-350</td>
</tr>
<tr>
<td>Trailer Park (Transient)</td>
<td>2½ Persons per Trailer</td>
<td>50-60</td>
<td>250-300</td>
</tr>
<tr>
<td>Mobile Home Park</td>
<td>3 Persons per Trailer</td>
<td>50-75</td>
<td>300</td>
</tr>
<tr>
<td>School</td>
<td>Cafeteria &amp; Showers</td>
<td>20</td>
<td>300</td>
</tr>
<tr>
<td>School</td>
<td>Cafeteria/No Showers</td>
<td>15</td>
<td>300</td>
</tr>
<tr>
<td>Recreational Parks</td>
<td>Overnight User</td>
<td>30</td>
<td>200</td>
</tr>
<tr>
<td>Recreational Parks</td>
<td>Day User</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>Office Building or Factory</td>
<td>A facility must be</td>
<td>20</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>designed for the largest shift</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotel/Motel</td>
<td>Per Bed</td>
<td>50-75</td>
<td>300</td>
</tr>
<tr>
<td>Restaurant</td>
<td>Per Meal</td>
<td>7-10</td>
<td>1000*</td>
</tr>
<tr>
<td>Restaurant with bar or cocktail lounge</td>
<td>Per Meal</td>
<td>9-12</td>
<td>1000*</td>
</tr>
<tr>
<td>Hospital</td>
<td>Per Bed</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>Nursing Home</td>
<td>Per Bed</td>
<td>75-100</td>
<td>300</td>
</tr>
<tr>
<td>Alternative Collection Systems (Subchapter D)</td>
<td>Per Capita</td>
<td>75</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Based on a restaurant with a grease trap
Changes to Table B.1.

Add a column to the Table for NH$_3$-N
Look at revising the BOD$_5$ strength upward.
Clarifications

• Clarify the differences between the permitted flow from max 30 day average and annual average.
• Clarify the minimum information needed to rerate a wastewater treatment plant.
• Emergency power requirements in 217.36 and 217.63 are consistent.
• Flow measurement weirs for small plants.
SUBCHAPTER C
CONVENTIONAL COLLECTION SYSTEMS
Pipe Design

• Clarify intent related to gaskets on pressure rated pipe when 9 foot separation from water lines cannot be provided or add a requirement that gaskets operate properly at atmospheric pressure

• Correct 217.53(k)(4) to refer to the structural calculations in 217.53(k)(2)
  – Currently refers to 217.53(k)(3), which provides the pipe stiffness equation required in 217.53(k)(2)
Testing Requirements for Gravity Pipes

• Consider reducing the maximum allowable leakage in the infiltration/exfiltration test
  – Currently 50 gallons per inch diameter per mile of pipe per day
Gravity Pipes

• Add requirements for Polypropylene Pipe
Manholes

• Clarify where bolted and gasketed manholes are required
• Add a requirement for engineer to specify an appropriate national reference standard for sealing manhole covers
Testing Requirements for Manholes

• Allow ASTM testing requirements for manholes
• Correct units in 217.58(b)(2)(d), related to tightening external clamps on the vacuum testing cover
Lift Stations

• Clarify allowable fence types and set 8 feet as the minimum fence height

• Clarify intent for above ground valves
  – Concrete pad adjacent to wet well O.K. (fenced)
  – Locked/chained in the fence
  – Tamper-resistant structure allowable

• Consider swing-type valves that do not have external levers
Lift Stations

• Add backup high water float requirement for wet well level detection

• Other clarifications
  – Control pad must be large enough for personnel to do electrical work safely
  – Ladders and access hatches must also meet OSHA
  – Non-corrosive vents for all lift stations
  – Explosion-proof equipment for all lift stations
  – Dry well pumps must discharge to wet well
Lift Stations

• Other clarifications (cont.)
  – Hoisting equipment and access
  – Separate pipes for sump pumps
  – Expected peak flow for firm pumping capacity
Emergency Provisions for Lift Stations

• Clarify that generators or auxiliary pumps can may be used
• Add minimum fuel tank size requirements based on hours of fuel
• Add a section for gravity relief sewers
• Clarify quick connection design and generator electric loading design
Force Mains

• Add fatigue life calculation requirements
• Consider basing minimum velocities on the smallest pump operating at full speed
  – Consider additional flushing requirement for variable speed pumps that normally operate below minimum velocities
• Clarify that air release valves must be noncorrosive
Reclaimed Water

• Remove requirement that electrical equipment be operable during a 100 year flood event
  – Consider requirement that equipment be operable after a 100 year flood event

• Consider swing-type valves that do not have external levers
SUBCHAPTER E
PRELIMINARY TREATMENT UNITS
Clarifications

• Clarify the requirements the on EQ basin

• Correct the spelling on Coarse Screen.
SUBCHAPTER F
ACTIVATED SLUDGE SYSTEMS
Clarifier

• Clarify and update the flow velocity in the sludge pipe.
Membrane Bioreactor Systems

• Clarify and update the nutrient removal requirements.
Aeration Sizing Equipment

• Clarify the oxygen requirement for high NH$_3$-N plant.
• Corrected the units in equation F2
• Add a table showing the max allowed % transfer efficiency a varying depth for fine and coarse bubble
• Other Clarifications
Solids Management

• Add a new section for Airlift Pump (217.159)
Advanced Nutrient Removal

• Rewrite this section requiring the engineering to submit all calculation on nutrient removal.
SUBCHAPTER G
FIXED FILM AND FILTRATION UNITS
Cloth Filters

• Add requirements for cloth filters and other similar filters
SUBCHAPTER H
NATURAL TREATMENT FACILITIES
Natural Systems

• Correct pond liner permeability requirements
• Correct aerated pond treatment efficiency equation
Chlorination/Dechlorination Systems

• Clarify intent related to tank placement for spill containment
• Allow a minimum length to width ratio as an alternate to modeling for chlorine mixing
SUBCHAPTER M
SAFETY
Pipe Color Coding

• Updating the pipe color coding to be consistent with the MOP 8 and National Plumbing Codes.