

Iowa Wastewater Facilities Design Standards (IWFDS) EO10 Fact Sheet

All Chapters

- Consolidation into one rule reference document
- Renumbering of IWFDS Chapters (Ch 11 – 21 → Ch 1 – 11)
- Definitions moved to preamble
- Waiver (variance) provisions removed (elimination of duplication of waiver provisions in 567—Ch 10 and 567—Ch 64)
- Update/correct NFPA classifications & electrical/safety/ventilation requirements
- General cleanup – fix errors, deletion of outdated/obsolete code and rule references, spelling/grammar errors, etc.
- Highlight key (references with be verified and updated as rulemaking proceeds):
 - Internal references in the IWFDS are highlighted in orange.
 - Iowa Administrative Code (IAC) rule references are highlighted in yellow.
 - Iowa Code references are highlighted in green.
 - References to the Clean Water Act (CWA or Act) and the Code of Federal Regulations (CFR) are highlighted in teal.
 - References to supporting documents are highlighted in purple.

Ch. 1 (formerly 11)

- Exceptions from a permit expanded/clarified -
 - Replacement done with same methods, materials, capacities and design considerations as the original construction
 - Sanitary sewer service connections, except connections to a proposed innovative/alternative sewer system will be reviewed for approval
 - Industrial pretreatment, except lagoons
 - Alterations rectifying imminent public health and safety emergencies
 - CIPP lining, cementitious manhole liners, spot repairs (with approved standard specs)
- Engineering services - Amendments to a facility plan should be submitted 90 days before desired action
- Construction permit application -
 - Listing of required schedules/forms by project type
 - A letter report with Sch. A may be accepted for minor projects
 - Single copy/electronic submittals accepted
- Engineering Reports or Facility Plans -
 - Cross reference to Section 8C.2 for soils information requirements involving lagoon construction
 - Supplemental information addressing Section 4.4.3 requested where innovative technologies are proposed
 - References to EPA construction grants deleted
 - CWSRF references added
 - Where a collection system is evaluated, maps of the existing sewers shall be provided
 - The engineering report shall describe each alternative
 - Identify and justify the outfall location.
 - For combined sewer studies where sizing of a wet weather equalization basin must be minimized, a plant hydraulic capacity approaching the MWW flow is recommended
 - Process diagrams - include flow measurement and sampling locations
- Detailed Plans - As necessary, detailed plans should show existing and design sludge storage volumes
- Standard Specifications - SUDAS may be incorporated by reference without adoption
- O&M Manuals - manuals shall be submitted to field offices no later than 12 mo. after start of operation unless a longer period is required

Ch. 2 (formerly 12)

- Pipe Materials - Updated pipe materials and joints table; added provisions for materials not covered by established ASTMs
- Diameter - Unsewered exception changed from 6" allowed for last 800' to 6" allowed for all laterals and submains
- Manholes -

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- Modified max. allowable spacing; added language for spacing above max. with documentation of cleaning capability
- Allow cleanouts at terminal end of any sewer without length restriction with documentation of cleaning capability
- Protection of Water Supplies - Added min. separation distance of 3' for manholes from watermains (consistent w/ WS rule)
- Construction Details - New section Alternative Installation Methods (Trenchless Technologies)
- Testing - Allowable infiltration/exfiltration rate changed from 200 gpd/in/mi to 100 gpd/in/mi

Ch. 3 (formerly 13)

- Flood Protection - Reference to Ch. 4 (14)
- Pumps
 - Trash basket requirement removed (now "should")
 - Exception can be made on 3" pump opening requirement (w/o waiver) provided the design includes equivalent protection from clogging
 - Updated electrical/ventilation provisions
- Emergency Operation - Additional requirements for use of portable units

Ch. 4 (formerly 14)

- New definitions (anaerobic lagoon, innovative tech, outfall, PE, public use area, tech not fully developed, treatment works)
- Treatment Works Siting
 - Required separation distances moved from Ch. 4 to 567—Chapter 64
 - Exceptions (will stay in Ch. 4) - remote pumping stations, remote subsurface equalization basins, office/lab buildings, wetted disposal area for land application (per Ch. 11 (21)), water treatment plant residual treatment, boiler/cooling tower blow down basins. Note that exceptions do not apply to stripping towers for wastewater treatment)
 - Flood Protection – structures/mechanical/electrical protected from damage by the 100-year + 1' elevation
- Design
 - Prohibited wastes - nutrient deficient wastes, wastes with a closed cup flashpoint of less than 140 degrees F
 - New processes - piloting proposal recommendations, post-installation monitoring & contingency plan
 - Critical flow conditions - Maximum Seven Day Wet Weather (MSDWW) added
 - Existing system, municipal – at least 3 years of flow data recommended
 - Flow (and Load) Equalization
 - Return of flows to treatment plant in a timely manner during off-peak periods
 - Where feasible, plant hydraulic capacity in range of MSDWW to MWW recommended
 - In no case shall the hydraulic capacity be less than AWW flow
 - Domestic loadings - per capita TKN loadings added
 - Septage loadings (new – include if applicable)
 - Sludge disposal during construction (new - present plan)
- Treatment Facility Reliability Classes
 - Updated descriptions based on current stream use designations
 - Meaning of 2-stage nitrification clarified (includes intermediate clarification)
 - Power source reliability
 - Emergency generator recommended where two substations may lose power
 - If natural gas is proposed, an emergency generator that can run on multiple fuel supplies is recommended
 - Exception for aerated lagoons to not provide backup power for disinfection eliminated
- Plant Outfall
 - Consideration of effluent/cascade aeration

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- Consideration of dispersion across the stream
- Effluent sampling point prior to disinfection required, except UV disinfection
- Diffusers
 - Pumping recommended to ensure adequate head
 - Recommendations for orifice velocity, port sizing, & location
 - Discharge below 7Q10 water surface
 - Protection of line (placement of manifold below stream bed)
 - Diffuser location posted
- Essential Facilities
 - Flow measurement
 - Additional flow measurement required for treatment systems where flow is equalized
 - Magnetic flow meters accepted
 - Elapsed time meters limited to systems serving 500 PE or less
 - Sampling Equipment
 - Provide as necessary to meet discharge and influent monitoring requirements
 - Influent sampling shall be at the plant
 - Composite samplers shall meet electrical requirements of 3.4.7 (13.4.7)
 - Include provisions to report amount and rate of septage

Ch. 5 (formerly 15)

- Screening Devices - changed minimum opening for mechanical screens from 5/8" to 1/4"
- Comminutors - changed terminology to Comminutors/Grinders

Ch. 6 (formerly 16)

- No substantial content changes

Ch. 7 (formerly 17)

- Sludge Stabilization and Holding
 - Clarify prevention of scum and grease recycling back to process units
 - Update general requirements for heat treatment, lime stabilization, composting, and any other stabilization methods
 - Sludge storage aeration/mixing recommended, not required
- Sludge Drying Beds – filtrate returned to treatment process at appropriate point
- Final Disposal of Sludge – add references 567—Ch 67 and 567—Ch 121 for disposal of municipal and industrial sludge by land application, respectively; disposal by landfill is under solid waste regulations

Ch. 8A (formerly 18A)

- No substantial content changes

Ch. 8B (formerly 18B)

- No substantial content changes

Ch. 8C (formerly 18C)

- Supplement to Engineer's Report - Sulfate content of water supply should be considered (formerly shall be determined)
- Hydrology
 - Groundwater and bedrock vertical separation measured from "the top of the pond seal"
 - Groundwater lowering may be considered without "perched groundwater" condition

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- Lagoons proposed in Karst areas must undergo special hydrogeological review
- Aerated Facultative Pond Design - Modification to Existing Lagoons - Removed outdated condition of CDL conversion to aerated lagoons; added description of when mod. of the existing lagoon seal is subject to the new percolation rate
- Pond Construction Details -
 - 95% Standard Proctor Density in soil compaction for pond bottom and dikes (vs. current 90%)
 - Added a clarification of measuring freeboard vertically between the max. water level to the top of the dike
 - Bottom seal
 - Max. allowable percolation rate changed from 1/16 inch/day at 6' depth to 500 gpd/acre/day at 6' depth
 - Changed minimum seal thickness from 4" to 12"
 - Minimum synthetic liner thickness for HDPE = 60 mils
 - Added greater liner thickness or double liners may be required for industrial wastewater
 - Additional synthetic liner installation requirements
 - Allowance for error when testing percolation using water balance
 - Liner sample leakage test samples to have minimum depth of 12" instead of current 6"
 - Controlled discharge influent lines may be placed above lagoon bottom with an anchored discharge apron
 - Pond piping material updated
 - Updated hydraulic capacity of lagoon piping
 - Added the requirement for registration with IDNR Water Supply when prefilling more than 25,000 gpd
- Disinfection - Updated disinfection requirements, appendix diagram
- Lagoon Sludge Removal and Disposal – new section outlining sludge disposal requirements

Ch. 9 (formerly 19)

- Other Supplemental Treatment Processes – struck microscreening paragraph (obsolete)

Ch. 10 (formerly 20)

- Ultraviolet Radiation - replace current with 10-States dosage requirements
- Provision for case-by-case review of other disinfection methods (e.g. peracetic acid)

Ch. 11 (formerly 21)

- Incorporated wastewater land application process improvement recommendations including:
- Applicability and Scope – new section
- General Site Considerations – added exclusions and prohibitions
- Land Application Rate Determination
 - Added phosphorus loading
 - Added salinity restrictions with sodium adsorption ratio equation/details
 - Revised trace elements max. application concentrations
- Slow-Rate Land Application – included types of systems and their advantages/disadvantages