11/4/25 Design Standards Update Stakeholder Meeting Comments - Responses/Revisions

IWFDS Section	Comment	Response	Revision(s)
Ch.6 Side Water Depths	Add footnotes to the table.	Footnotes were in-place in the draft at the time of the meeting but may not have been viewable during the presentation.	
Ch. 6 Surface Overflow (and solids loading) rates	General comment - Tables are preferred to text where possible.		Replaced Sections 6.3.2.2 & 6.3.2.3 text criteria with new Table 2 & Table 3.
		This revision was not in response to a comment, but was included subsequent to the stakeholder meeting to be consistent with 10 States Standards and WEF MOP 8.	Added separate recommended SORs for primary clarifiers receiving waste activated sludge to Table 2.
	Paragraph 6.3.2.4.2.c. What kind of data would DNR be looking for from pilot studies or systems already in operation?	This may vary depending on what measures to increase rates are proposed, but in general pilot testing, studies or empirical data from installations where the proposed measures have resulted in the ability to consistently handle higher loading rates while maintaining effluent performance sufficient to meet applicable effluent limits. The data may be sourced from available literature/studies where such materials are based on/include real-world data from similar applications.	
	Paragraph 6.3.2.4.2.c. Consider adding additional methods to justify higher surface overflow rates/solids loading rates: state point analysis, computational fluid dynamics analysis, (others?).	Although useful in comparing different design conditions, we view state point analysis as more of an operational tool. Incorporating state point analysis as a basis for increasing design SORs or SLRs above the criteria raises the questions of what flux curve equations are to be used (e.g., Daigger- Roper vs. Hartel-Popel vs. Ozinsky-Ekama) & what max. SVI (and possibly safety factor) adequately accounts for occasional poor sludge settleability & safeguards against overloaded conditions during the design life of the clarifiers. CFD modeling is not specifically precluded in that a data-based site-specific validated model could be used to demonstrate the ability to handle higher rates for an existing clarifier or piloted improvements. CFD analysis may also be part of any study that evaluates the efficacy of optimization measures. However, without validation data, we have no way to review or assess the accuracy of a given CFD model for a proposed installation.	
	Solids loading rate is currently in 6.3.2.4.2.b. Is this in the right place? If it's here, the title doesn't lead me to understand that it would be listed here.		Modified Section 6.3.2 to include solids loading rates in the heading and incorporated SLRs in revised Table 4 to make SLR values more noticeable.
	Keep surface rates as one and solids separate so that people don't miss it.		See above.
	Consider allowing higher temporary overflow rates or primary clarifiers when clarifiers are out of service.	Is allowed in Ch. 4 reliability criteria. Under 50% reliability, rates could double with the largest unit offline. Under 75% reliability, rates could increase by a factor of 1.33 with the largest unit offline.	

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	Flexibility for design solids loading rate/expand the language (subpara. C).	See above with respect to state point and CFD analyses.	
	Why does Iowa use 30 lbs/day as opposed to 10 States?	10 States does not have a 30-day max. design flow condition and uses the max. day flow to for its SLR criteria. Iowa criterion is arguably less restrictive if comparing the newly proposed RAS rates & assuming a typical MWW/AWW ratio of approx. 1.67 - 2. However, the IWFDS also include a PHWW criterion of 50 lbs/d/sq. ft. With the proposed revisions to the RAS rates, we anticipate that SLRs would control sizing in limited circumstances, i.e., very high design MLSS or very high PHWW values.	
Ch. 8B Table 1	Are there 2 of the columns that really control and others that are guidance?	In the context of typical activated sludge calculations, generally yes. Given basin loading & SRT, one can calculate MLSS, MLVSS & F/M (with some assumptions including influent TSS values). Or, given MLSS, SRT, & influent loadings one can determine a required basin volume yielding the volumetric loading & F/M ratio. However, we prefer to include all of the parameters (ranges) shown for reference as typical values or ranges. As "typical" values a design that, for example, meets a given max. aeration tank organic loading but falls slightly outside the corresponding F/M ratio range would not be considered to be "differing substantially" from the Table 1 values.	
	It would be nice to see a definition or examples of technology types in each category. Extended aeration may be an oxidation ditch. More clarity in the table to help define processes.	There are many different "flavors" of activated sludge, e.g., oxidation ditches, Aeromod, Biolac, etc. We prefer to keep the categories somewhat broad and avoid listing the many activated sludge technology variations. However, we clarified which general categories do & don't include nitrification.	Table 1 modified to indicate nitrification/no nitrification.
	Where does combined carbon oxidation-nitrification fall? Is it absorbed into single-stage nitrification category?	Yes, it is considered to be the same as single- stage nitrification.	Clarified in Table 1.
	Max. aeration tank loading; What specifically is included in volume calcs? What is considered aeration volume if you have flexibility in design for swing zones?		Modified Table 1 footnotes to clarify aeration tank loadings may consider load reductions from preceding units/zones (typically BNR anaerobic or anoxic zones). Swing zones would be considered as aeration tank volume as long as aeration is provided, even if they may be operated in an anoxic mode.
	BOD reductions in anoxic/anaerobic zones.		See above.
	Solids retention time, for nitrification processes? Needs clarification.		Modified Table 1 to clarify that the SRT is the Aerobic SRT.
	Would this fall under BNR section in terms of aerobic vs. anaerobic zone SRT. Looking for a table note, "BNR systems would be…".		See above.

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	Granular sludge? AGS or densification as a sub-category.	We consider these to be new technologies to Iowa at this time.	
	What prompted the change in SRT for step aeration? Where does step feed fit in?	Consistency with 10 States. Our interpretation is that step aeration is the same as step feed, with introduction of influent at multiple points in a plug flow arrangement.	
	What do the tables apply to (interpretation).		See above
Ch. 8B Aeration	Certified clean water testing should be recommended but not required ("should" not "shall").	Comments on this appear to conflict. We have left certified testing as a recommendation.	
	Certified clean water testing should be required (specs need to show clean water testing anyway, allowance for 2 lbs/hr., how do we know what they are capable of?)	See above.	
Ch. 8B RAS Rates	Reference to a range of RAS 8B.5.3.1; instead of text, have a reference table.		Modified to reference the ranges in 8B.5.1.
	The headers for max. lower value and min. upper value are confusing a first glance. Is there a better way to say this?		Modified nomenclature with footnote that wider ranges (min. rates below the lower values or max. rates above the upper values) are OK.
	Pleased to see the flexibility. Still baffled why AWW as the base rate instead of other averages.	Determination of the ADW flow (defined as the daily avg. flow when groundwater is at or near normal & runoff is not occurring for a period of measurement extending as long as favorable conditions exist, up to 30 days if possible) from DMR data can be somewhat subjective & the IWFDS do not include a 365-day design avg. (DAF) flow similar to 10 States. Rather than introduce another design basis flow, we attempted to mirror 10 States values by assuming a typical AWW/DAF average ratio of ~ 1.5, which was consistent with DMR values we looked at from several municipal facilities.	
	Are we specifying a redundant RAS pump?	The current standards require that the maximum RAS capacity be obtained with the largest pump out of service. We are not proposing to change this requirement.	
	Types of processes are different from this table to the last one. Think about consistent nomenclature – how do things match up between the different sections/tables.		Modified Table 1 to show separate stage nitrification values consistent with the RAS table (Table 2).
	Have flexibility to bring forward alternate analysis without having to go to a variance.	We anticipate the revised (significantly lower) RAS upper rate criteria will reduce the number of variance requests. Generally, we haven't seen variance requests for RAS rates below these values.	

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	(On wording change "Independent" in 8B.5.3.2) We were just wanting to understand if 8B.5.3.2 would trigger upgrades, which could be extensive, depending on a rehab project.	The requirement would apply to new construction, installation, or modifications. It would not trigger upgrades for existing settling tanks that do not have independent devices to reconfigure piping/pumping/flow monitoring arrangements, etc. However, we would recommend such modifications if the existing configuration is problematic in terms of operational control of sludge blankets	
Ch. 8B SBR and BNR	SBR language was in then removed, is this the same language? This is now a summary.	Unsure what language is referenced in this comment. All of Section 8B.6 is new. It would effectively supplant the DNR's existing SBR guidance document, which is perhaps what is being referenced.	
	(On the question of should BNR be part of Chapter 8B). Yes, it should be in the chapter to get it out there now. But ideally it would be good to have a separate chapter.	OK	
	External carbon sources accounting in BNR section; Is it considered in the design capacity of the plant (Goes on Sch. G)? How does this loading affect tankage sizing; Does it only apply to anoxic/anaerobic zones. Small clarification would be helpful.	Typically, an external carbon source would not be included in the raw wastewater design loads specified in Sch. G. Ideally any supplemental carbon sources fed at appropriate rates should improve treatment performance and process stability, e.g. by itself the use of a supplemental carbon source to help drive denitrification would not be considered an additional design load or trigger an antidegradation review.	Removed "If appropriate, an external carbon source may be included in the organic loadings used for wastewater treatment plant design" to avoid confusion on this. Added note to Table 1 to clarify that the organic loading criteria exclude supplemental carbon sources used to sustain BNR processes.
	BNR section is more narrative – doesn't set up a lot of numeric standards; Doesn't give a lot of information to go off or standards to meet.	We agree that it is somewhat limited. BNR processes are varied and can be fairly complex, making them less amenable to general design criteria than conventional or nitrification-only activated sludge systems. We anticipate the BNR standards will evolve over time to offer more specifics but at this time feel it is best to follow 10 States' general approach.	