Please note: due to time constraints, the following slides were not presented at the 3.9.2021 Nutrient Forum despite being on the agenda. We plan to share these slides at a future Nutrient Forum meeting in 2021.
SSM & calculating meeting standards

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DO Standards Are Protective

Dissolved oxygen levels established in the water quality standards are intended to set levels that protect healthy and robust aquatic communities, including the most sensitive species.
Table 210 (1)(c) from WAC 173-201A-210

- **7.0 mg/L** (Extraordinary) - most of Puget Sound and the Straits
- **6.0 mg/L** (Excellent) - Bellingham Bay, Samish Bay, Skagit Bay, most of the Whidbey Basin, parts of Budd Inlet and other parts of South Sound Basin
- **5.0 mg/L** (Good) - Commencement Bay, Budd Inlet, and headwaters of some inlets
- **4.0 mg/L** (Fair) - finger of Commencement Bay

- Concentrations are measured as 1-day minimum (Dmin)
- Average frequency of not meeting standards less than once per 10 years
PART B- Limit Human Impacts to the Natural Condition

WAC173-201A-210(d)(i): When a water body’s DO is lower than the criteria in Table 210(1)(d) (or within 0.2mg/L of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the DO of that water body to decrease more than 0.2mg/L.

**Cannot lower DO more than 0.2mg/L below natural conditions due to human actions**
Salish Sea Model Grid Cells

- Each grid cell has 10 vertical layers
- Results represent average conditions within each grid cell layer
- Compare daily minimum DO for every layer to DO standards
- Plan-view maps show layer with largest DO depletion below standards
Example comparing DO standards with the model results

**Example 1:**
Part A not met

- Reference condition $D_{\text{min}} = 8.0$ mg/L
- $DO_{\text{std}} = 7.0$ mg/L
- $DO_{\text{depletion below std.}} = -1.0$ mg/L
- Existing $D_{\text{min}} = 6.0$ mg/L

**Example 2:**
Part B not met

- Reference condition = 6.0 mg/L
- $DO_{\text{std}} = 7.0$ mg/L
- $DO_{\text{depletion below reference of > 0.2 mg/L}} = -0.8$ mg/L
- Existing = 5.0 mg/L
Days Not Meeting Standards in 2006

No color means that the grid cell meets standards and passes both Part A and B tests.

If a grid cell is colored in, then it does not pass either the Part A or Part B tests (or both) and does not meet standards.
New Results Coming at the Next Forum

• Optimization Technical Memo (Year 1)
  – Impacts of watersheds by region/basin
  – Impacts of WWTPs by region/basin
  – Improvement from annual BNR8
  – High/Low future population nutrient load impacts
  – Combinations of watershed and WWTP reductions