Appendix OAR 690-093-0130

SB 839 Matrix to Select Methods for Development of Seasonally Varying Flow Prescriptions

When Is a Seasonally Varying Flow Prescription Required?

FOR above and below ground water storage projects that require a water right authorization and are seeking SB 839 funding, AND that are: impounding on a perennial stream, or diverting from a stream supporting STE species, or ≥ 500 acre feet…

The project will need a **Seasonally Varying Flow Prescription**, determining the duration, timing, frequency and volume of flows, (including ecological baseflow) necessary for protection and maintenance of biological, ecological, and physical functions. Note that this flow prescription does not replace other environmental review required by rule (e.g. Division 33).

How Hard Would One Have to Work to Develop an Seasonally Varying Flow Prescription?

Methods and effort necessary to develop flow prescriptions are related to the level of impact of the project and the availability of information. Use the two sets of questions below to determine the effort one would expend to determine a flow prescription. Projects with lesser ecological impacts and more available information will require less intensive study approaches than those with greater ecological impacts and less available information.

Step 1: What Is the Ecological Impact of the Proposed Project?

Questions to Discern Ecological Impact of Project (Circle Yes or No for each question)	
Is this project diverting from a stream supporting sensitive, threatened, or endangered	**Yes** or **No**
Is the impoundment located in-channel?	**Yes** or **No**
Does the impoundment or proposed project have an impact on sensitive habitat/process?	**Yes** or **No**
Of the remaining available water in the basin, is the project proposing to divert more than half?	**Yes** or **No**
Is a majority of available water already developed in the basin?	**Yes** or **No**

Impact of Project Score If Yes to any questions = Significant If No for all questions = Minimal	**Significant** or **Minimal**

Step 2: What Information about Streamflow Functions Is Already Available?

Functional Bands	Questions to Discern Availability of Information about Streamflow Functions (Circle Yes or No for each question)		Availability of Information Score Yes = Sufficient No = Insufficient
Hydrological Band	Are there sufficient long-term data* to understand the natural hydrograph?	**Yes** or **No**	**Sufficient** or **Insufficient**
	Is there sufficient information* to understand climate driven shifts to the flow regime?	**Yes** or **No**	**Sufficient** or **Insufficient**
	Is there sufficient information* about water availability?	**Yes** or **No**	**Sufficient** or **Insufficient**
Biological Band	Is there sufficient information* about all species present at/below the point of diversion and their lifecycle needs?	**Yes** or **No**	**Sufficient** or **Insufficient**
Hydraulic / Physical Processes Band	Are there habitat studies that provide sufficient information* to understand the relationship between selected habitat features and streamflow?	**Yes** or **No**	**Sufficient** or **Insufficient**
	Are there geomorphological studies or data that provide sufficient information* to understand the relationship between sediment transport and streamflow?	**Yes** or **No**	**Sufficient** or **Insufficient**
	Are sufficient* stream data available to describe stream complexity and floodplain connectivity?	**Yes** or **No**	**Sufficient** or **Insufficient**
	Are sufficient* water quality data available, particularly related to temperature?	**Yes** or **No**	**Sufficient** or **Insufficient**

Step 3: Combine Scores of Steps 1 and 2

Combined Scores from Steps 1 and 2 for Each Question (e.g. Minimal, Sufficient)

Step 4: Determine Which Study Methods to Use to Address Each of the Functional Band Questions

Resulting "Impact of Project" and "Availability of Information" Scores	Resulting SVF Study Methods Used to Develop Flow Prescription (see narrative for a description of data sources and a description of study methods)
Minimal, Sufficient	**Data Collection**: Field visits, and/or literature and expert review **Analysis:** Existing models and/or calculations
Minimal, Insufficient	**Data Collection:** Field work, field visit, and/or literature and expert review **Analysis:** Develop models, scientific expert workshop, existing models and/or calculations
Significant, Sufficient	**Data Collection**: Field work, field visits, and/or literature and expert review **Analysis:** Develop models, scientific expert workshop, existing models and/or calculations
Significant, Insufficient	**Data Collection**: Field investigations/study, scientific expert workshop, field work, field visits, and/or literature and expert review **Analysis:** Develop models, scientific expert workshop, existing models and/or calculations

* "Sufficient" information means enough scientific information collected using standard biological, hydrologic, or hydraulic methods to develop the recommended flow prescription. Level of effort creating a flow prescription should correspond to how the project relates to its biological and physical setting. As the proposed project increases in water requested relative to water available, risk to ecosystem functions, and complexity, so too will the level of detail necessary to develop a flow prescription. This approach responds to the economic feasibility realities noted in SB 839.