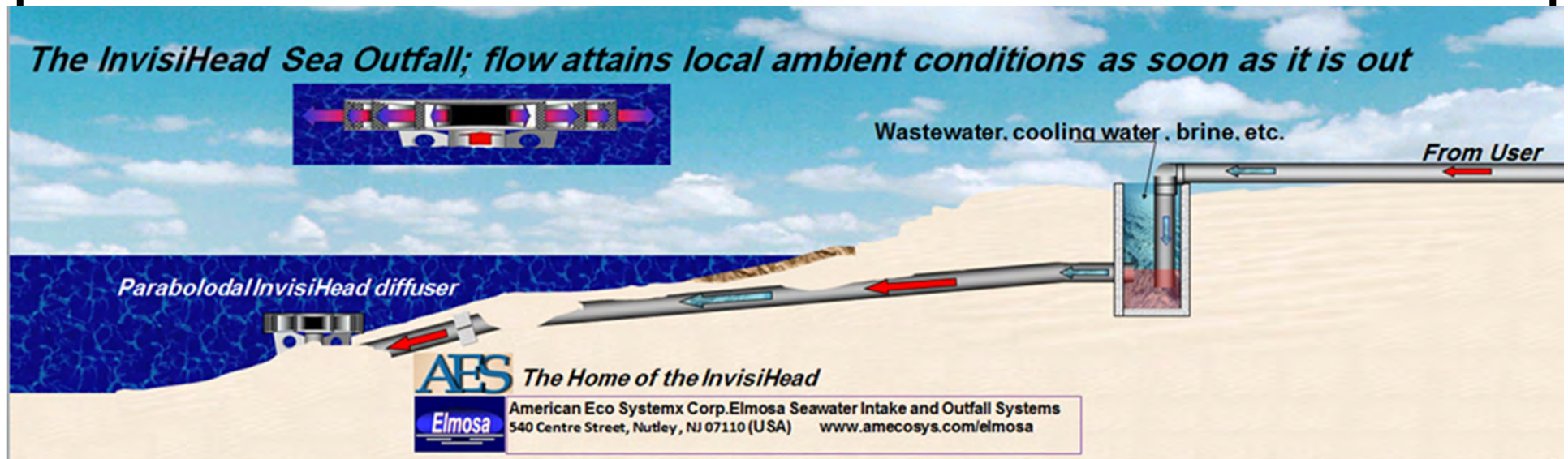


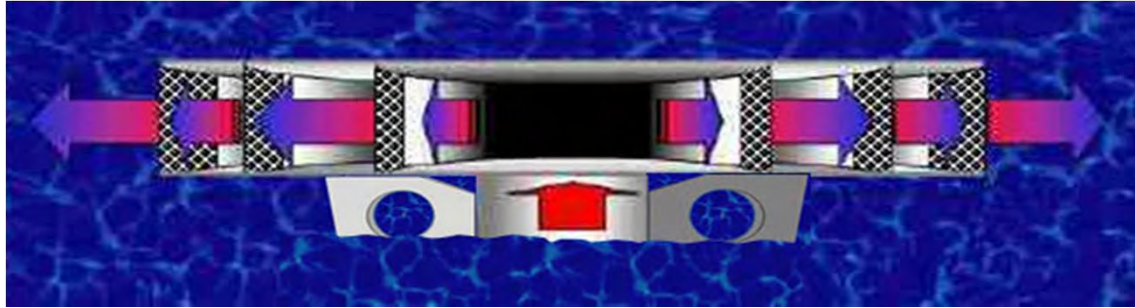
The InvisiHead Outfall and Discharge System as well as an Intake System



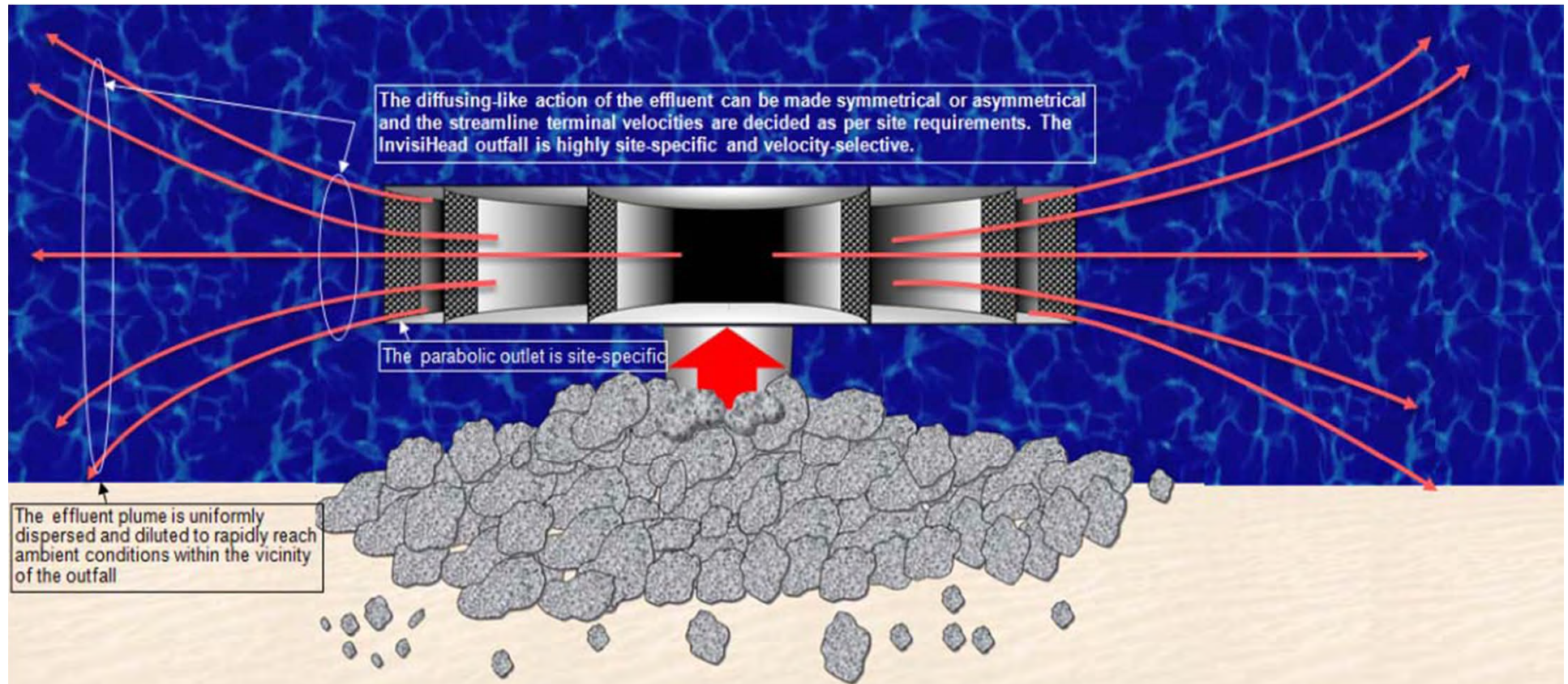
The extremely low velocity discharge through the IH diffuser allows it to reach the ambient conditions only a few meters away from the tip of the outlet. At that location TDS or thermal sensors will show no gain in temperature or salinity rise. At only 5 meters away from the diffuser outer tip, the velocity approaches 0.002 m/s. The 3-D dispersion action of the discharged effluent insures rapid mixing with ambient water. Ambient conditions are reached nearly soon after the effluent leaves the diffuser.

For coastal areas and through the environmental perspective, a once through cooling system with large heat and brine dissipation requirements, the IH proves to be the best option acceptable for Base Case design. For once through cooling water systems brine or municipal wastewater discharge, the IH design as an intake and outfall achieves the following:

- Adequate mixing and dispersion takes place within the very close vicinity of the outfall;
- The neutralization of extension of the discharge plumes to remain within 5 meters from the IH structure and to reach reach ambient conditions within that space (spatially and temporally);
- The discharge loads do not materially adversely affect other users of the receiving water;
- The InvisiHead sea outfall diffuser is also developed for protecting any critical areas such as spawning grounds or migration areas, e.g. location of outfall (depth of intake relative to organism habitat).



The IH discharges effluent in a 3-D round surround out flaring diffusing action. The effluent is in effect dispersed and diluted in an extremely large volume of the ambient water within a limited space surrounding the IH structure. The discharged effluents fade away into the ambient and reach equilibrium within a short time after diffusing.



The InvisiHead can be installed in offshore platforms, terminals, jetties, and other offshore installations to supply sediment and marine life-free water. It also can discharge effluents while meeting and exceeding regulatory standards. In offshore installations the InvisiHead can be directly connected to seawater pumps to provide users with clean water. It can also be connected to the upstream end of a discharge pipe to disperse effluents generated with the platform and other offshore installations.

