If you had a flared tube like a cylindrical pyramid without a base and a small hole at the top, and inside you had a spiral turbine that fit to the shape of said pyramid, and it was placed under water and turned on to spin so that water was drawn in from the wide end and out the narrow end would the expelled water be faster?

Solution: According to the flow continuity equation, flow of liquid in the tube has a constant flow rate at any cross section of the tube: $Q = v \cdot A = const$, where Q is the flow rate, m^3/s; v is the flow velocity of liquid, m/s; A is the cross-sectional area of the tube, m^2;

Then, $v_w \cdot A_w = v_n \cdot A_n$, or $v_n = v_w \cdot \frac{A_w}{A_n}$, it means that speed of water at the narrow end (v_n) of cone tube will be bigger then speed of water at the wide end of tube (v_w) at so much times, as the ratio of tube areas at the wide (A_w) and the narrow (A_n) ends.

Answer: Yes, water expelled from the narrow end of the tube will move faster than water, which is indrawn from the wide end of the tube.