Water Surface

Water Surface Materials now rely on the … model for translucency. This is a much faster and more efficient method. While the original release relied on … which can give off better specular highlights and environment lighting it was very heavy performance wise and better suited for arch-viz and pre-rendered animations. These materials on the other hand focus on real-time use in games and much time has been spent making them as efficient as possible while still maintaining high visual quality.

Ultra - Has Translucency based on the Surface Translucency Volume model has similar performance to Epic's Water Demo

High – Has Translucency based on the STV model, alternative water diffuse method to ultra

Mid – Has Translucency as an unlit mode STV Relies on lighting via blueprint for a single source

Low – No Translucency has normal and specular lighting.

Underwater Surface

High – Translucency based on STV model

Mid – STV model as unlit, will not react to changes in lighting

Low – Masked material lacks refracted distortion of the environment above the water

Post-Process Materials

All previous post-process materials have been combined into a single underwater post-process material. This eliminates some color banding artifacts and reduces post-processing costs significantly. Now that all calculations are done in one shader more complex interactions can be done while eliminating duplicated calculations.

High – Before tone mapping, combines custom and standard depth pass for underwater surface materials that use translucency – Underwater Surface High and Mid

Mid – Before tone mapping only uses standard depth pass for effects – will not display underwater surface materials that use translucency properly

Low – After tone mapping only uses standard depth pass

- Post-process effects that work before tone mapping (High, Mid) benefit from the additional VFX that the tone mapper provides like lens-flares and lens dirt effects.
- While these post-process materials are much more efficient than the original, it is recommended to use a second post-processing volume at depths lower than 3-5 meters as waterline split view shaders will be unnecessary.

Caustics Decal Material

For better visual quality and control I've added a new method to have underwater caustics via a decal actor – currently attached to Player Pawn and faded when high above the water for better performance.