Pipeline Stage 1 Synchronization Stage 0

SCENE VERTEX BUFFER --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE INDEX BUFFER --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE INSTANCE BUFFER --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE MESH INDEX BUFFER --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE MAT PARAM BUFFER --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE ALBEDO MAPS --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE NORMAL MAPS --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE AO MAPS --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE METALLIC MAPS --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

SCENE ROUGHNESS MAPS --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

PER FRAME BUFFER --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

GEOMETRY ALBEDO AO BUFFER --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE

Pipeline Stage 5 Pipeline Stage 3 Synchronization Stage 2 Synchronization Stage 1 SCENE ALBEDO MAPS PER FRAME BUFFER --OWNERSHIP CHANGE READ----OWNERSHIP CHANGE READ--COMPUTE -> GRAPHICS COMPUTE -> GRAPHICS SCENE NORMAL\_MAPS GEOMETRY ALBEDO AO BUFFER --OWNERSHIP CHANGE READ----OWNERSHIP CHANGE READ--COMPUTE -> GRAPHICS COMPUTE -> GRAPHICS SCENE AO MAPS GEOMETRY NORM MET ROUGH BUFFER --OWNERSHIP CHANGE READ----OWNERSHIP CHANGE READ--COMPUTE -> GRAPHICS COMPUTE -> GRAPHICS GEOMETRY DEPTH STENCIL SCENE METALLIC MAPS --OWNERSHIP CHANGE READ----OWNERSHIP CHANGE READ--COMPUTE -> GRAPHICS COMPUTE -> GRAPHICS Pipeline Stage 2 Render Stage 1 Ray Tracing Render Stage Pipeline Stage 4 SCENE ROUGHNESS MAPS RADIANCE TEXTURE Render Stage 2 --TRANSITION FOR READ----OWNERSHIP CHANGE READ--Shading Render Stage RENDER STAGE IMGUI COMPUTE -> GRAPHICS COMPUTE -> GRAPHICS

Pipeline Stage 7

Synchronization Stage 3

SCENE VERTEX BUFFER

--OWNERSHIP CHANGE READ--

COMPUTE -> GRAPHICS

SCENE INDEX\_BUFFER

--OWNERSHIP CHANGE READ--

COMPUTE -> GRAPHICS

SCENE INSTANCE BUFFER

--OWNERSHIP CHANGE READ--

COMPUTE -> GRAPHICS

SCENE MESH INDEX BUFFER

--OWNERSHIP CHANGE READ--

COMPUTE -> GRAPHICS

SCENE MAT PARAM BUFFER

--OWNERSHIP CHANGE READ--

COMPUTE -> GRAPHICS

Pipeline Stage 6

Render Stage 3

GEOMETRY NORM MET ROUGH BUFFER --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE GEOMETRY DEPTH STENCIL --OWNERSHIP CHANGE READ--GRAPHICS -> COMPUTE RADIANCE TEXTURE --TRANSITION FOR WRITE--GRAPHICS -> COMPUTE Pipeline Stage 0 Render Stage 0

Geometry Render Stage