

The Car (Updates)

The car's camera now adapts to inclines and declines on the roads. This allows the player to get a better view of the direction they are traversing.

The Turbo duration has been upgraded due to numerous feedback from players, who enjoyed the sense of speed but duration was lacking.

The drift camera has been altered however this is still a work in progress, the idea is to point the camera in the direction they are turning so they can see more of the road they are turning into, including any oncoming traffic.

Suspension has been tweaked to ease the traversal of inclines, however this still proves problematic with inclines with turns in the roads.

The materials have been updated to get closer to the concept art.

Beacons (Updates)

The game has two modes, Guided and experienced.

Experienced mode, shows only the final beacons of each objective. (This mode is also perfect for playtesting new content/changes as you don't have to go through the whole intro of the game).

Guided mode, constructs a trail of beacons to lead the player to their final objective (The term breadcrumbing is used here).

Breadcrumbing beacons will spawn the initial one and hide the remaining beacons, once the first one is destroyed/acquired, the next one in the sequence will appear, the player will see the new one and have a new distance marker.

The green beacon was a little harder to implement as the new placement is on the upper level of the city. The reasoning behind this decision was to encourage the player to explore more of the city.

Regardless of the chosen mode, a challenge is implemented, the first two act objectives act as a "how to". The third gives the player the opportunity to find the third beacon by themselves.

However, we don't have the intention to let players get lost. I created some guidance beacons 4 sequences were created. Only one of these beacons will activate, this activates the closest beacon to the player. The remaining three beacons won't activate at all.

Once this initial beacon is acquired similarly to the other guidance beacons, the next one in a sequence will activate.

The only issue we currently have is if the player isn't facing the beacon or can't see the beacon, once a minimap is implemented it might solve this issue or at least provide another level of feedback for the player.

The challenge is fairly simple, the player has the dialogue time, plus 30 seconds if the player doesn't reach the final beacon then the guidance ones will appear. However there is a problem with if the player discovers where the beacon is, but doesn't make it in time, we didn't want the player to backtrack. So they could still complete the objective regardless, we also didn't want to punish the player. The only difference is the dialogue played when the final one was reached.

A yellow and final beacon was made to create the player to access/traverse the bridge, once the final beacon is reached we will display our end of demo widget.

Cutscene

The game needed a way to tell the player something in Base Reality has changed, our original intent was to use this opportunity to create another level and have the player perform a race or mission. Upon completion, we wanted a cutscene prior to this to give the player an explanation to the new environment, then a cutscene to explain why they have returned. Once the cutscene is over and they have arrived back in the original level, a bridge(s) would have materialised.

Due to time limitations and the past not being ready for use, a cutscene would have to suffice.

The cutscene acts as a point to break up the action and give the player some time to absorb the story.

The Bridge

The bridge acts as a means of progression. Ideally this will lead to another island/area on the map. However, as the entirety of the map hasn't been designed, there are still a lot of options that could be explored.

AI Cars

AI cars, especially the police units had some functionality where they would chase the player. However, changing engine created issues with this, will need to see if they are still causing an issue in 5.2.1

Currently these cars drive from point A-B along a spline, using the road tools, Originally this would only use static meshes, however, with some duplication and editing the blueprint it now uses skeletal meshes making our car's model usable for the AI.

The system is also set up to make these cars use a random material/change the light colour. The user can always add more as the project progresses.

Minimap

The minimap in its current state is in a bad way (07/06/2023).

Ideally if the map is working as intended, the beacons would show up on the minimap, adding another level of clarity to where things are on the map.

The next thing we would like to implement, the ability to toggle certain objectives on and off such as, All, beacons, collectables etc.

Waypoints/custom waypoints, and a satnav like experience which optimises the best route based on the player's position, then draws it on the map. Additionally we would want it to update in real time and recalculate if the player makes a different turn.

Optimisation

The game needs serious optimisation, especially as the project's scope expands.

To begin with I used a method called distance culling, this will render objects unless they are outside the distance set in conjunction with the player's camera. This allows us to remove objects from the scene that are far in the distance from the player.

This second system is a cull volume, similar principle but it does it based on the objects size and the distance, it allows you to turn off certain objects within the volume's bounds.

Other methods will need to be considered after testing two different maps, one map was running at 100fps-120fps, both in editor and the game. Whereas the Base Reality level its scraping 30fps.

One of the warning errors that the game produces when the landscape is built, is that large objects casting shadows will cause an extreme performance hit.

To counter this the option is to look into ways to potentially reduce the shadow quality of large objects, to see what result we can muster, if the lowest setting can't make the game run smoothly the alternative is to turn the shadows off, then cast ones that are essential.

We may have to use something akin to LOD's and find a way to reduce shadow quality or increase it.

Nanite is also another powerful Unreal Engine 5 exclusive tool, which uses a system which to explain it loosely allows objects to have reduced triangles but keep the geometry the same, too low however, may distort the mesh.

This works for static meshes only, which means skeletal meshes will still need to be handled in the default manner.

Simple Dialogue system

The simple dialogue system, by default needed some alterations to suit our needs, firstly the position of the widget was in the wrong place, this needed to be under the car, as above it makes visibility of the level poor.

Secondly if the player is driving and a new line of dialogue is being displayed, then the player may miss this, currently no voice acting is implemented and maybe it won't be, still yet to be decided. A notification ping will be implemented to notify the player that a new message/dialogue has been displayed.

Some users find this quite difficult to read and concentrate on the driving aspect. The voice over option could eliminate the issue, however, needing to record will take more time and money and data, then trying to sync it up with the text, additionally, if we plan on using different language voice overs.