DATA

SECTION 1 · SUBSECTION 1.1
THE NIGHT SURVEY

1.1.1 INTRODUCTION.

The plate above is a Gaussian splat of downtown Miami at night around Biscayne Boulevard and NE 5th Street, built from public drone footage. It sits in the KNL_006 shot frame, in metres, so anything measured in it can be compared directly with the set. It is the reference for the background buildings and the night lighting of KNL_006.

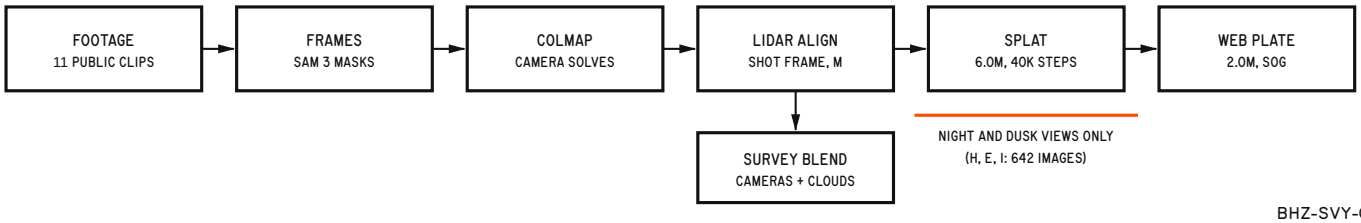


Figure 1.1-1. Survey pipeline. Day and 360 clips give geometry only; the splat is trained on night and dusk views.

1.1.2 FUNCTIONAL DESCRIPTION.

Frames are taken where the drone moves (still stretches are dropped). Cars, people and burned-in titles are masked out with SAM 3. COLMAP solves each clip. Each solve is placed on the 2019 LiDAR with landmarks (Freedom Tower, the Bayside ferris wheel) and then fitted to it point by point. The remaining error is a median of 1.0 to 1.7 metres.

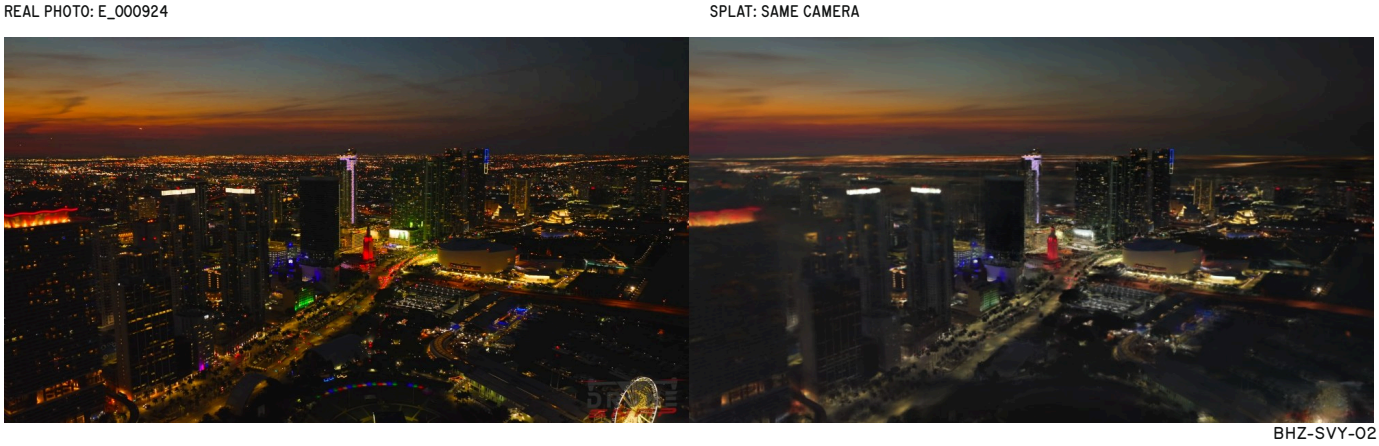


Figure 1.1-2. Dusk aerial against the trained splat, before web reduction.

Table 1.1-1. Clips and solves

Clip	Light	Solved	Used for
H	Night aerial, 4K	335	Splat
E	Dusk aerial, 4K	50	Splat (joined to H)
I	Night aerial, 720p	257	Splat (joined to H)
D	Day aerial	162	Geometry, dense cloud
J	Blue-hour 360	1120 views	Geometry
K	Day 360	1280 views	Solved, not aligned
A, B, C	Day street drives	198, 163, 276	Solved, not aligned

NOTE

The footage is public YouTube material, used as reference only. Nothing from it is delivered in the shot.

SECTION 1 · SUBSECTION 1.2
THE SPLAT AND THE PLATE

1.2.1 TRAINING.

642 images from clips H, E and I trained one splat (gsplat 1.5.3, MCMC, 40,000 steps, 6.0 million Gaussians, seeded from LiDAR and solve points). On every tenth image, held out from training, it scores PSNR 20.9 dB (22.1 after colour correction), SSIM 0.745 and LPIPS 0.22. It was trained in kilometres: at metre scale the trainer's position noise threw every Gaussian out of view.

1.2.2 WEB PLATE.

For the browser the splat is cropped to a 4.0 by 3.0 km box around the survey, reduced to 2.0 million Gaussians and stored as SOG (30 MB). The viewpoints are real solved drone cameras; the orange pin is the KNL_006 shot camera at frame 1005.

1.2.3 LIMITS.

The splat is only good near where the drones flew. From street level it breaks into blobs, and ground or roofs that no drone saw are smeared. Night and dusk views are mixed, so some surfaces change colour with the viewing angle.



BHZ-SVY-03

Figure 1.2-1. Viewpoint 03: Freedom Tower, from the browser plate.

Table 1.2-1. Viewpoints

No.	Station	Source	Height, m
1	Dusk Over Bayside	E_001206	218
2	Biscayne Blvd, Freedom Tower Ahead	H_002382	47
3	Freedom Tower	H_003864	45
4	Kaseya Center And The Tower Wall	H_001296	49
5	Blue-Lit Campus Block	H_000816	45
6	Bayfront Park And The Bay	I_004831	101
7	Bayfront Towers From The Water	I_012273	79
8	KNL_006 Shot Position	KNL_006_cam f1005	95

PLATE CONTROLS — MOUSE / KEYS / TOUCH

1 Drag: orbit
2 Right-drag or 2 fingers: pan
3 Wheel or pinch: zoom
4 Keys W A S D: fly, Q E: down, up
5 Pick a viewpoint at left
√ Orange pin: KNL_006 camera

SECTION 1 · SUBSECTION 1.3
WHAT THE SURVEY SHOWS

1.3.1 COMPARISON.

The KNL_006 night scene was rendered through the solved drone cameras and set beside the real frames. Geometry lines up: towers, garages and the Freedom Tower sit on their real counterparts. The gap is light and facade detail. Lit fractions below are estimated by eye.

1.3.2 WHAT HOLDS.

The sodium street look holds: from above, the downtown grid reads amber. White LED belongs on parking lots and park paths, not on the boulevard.

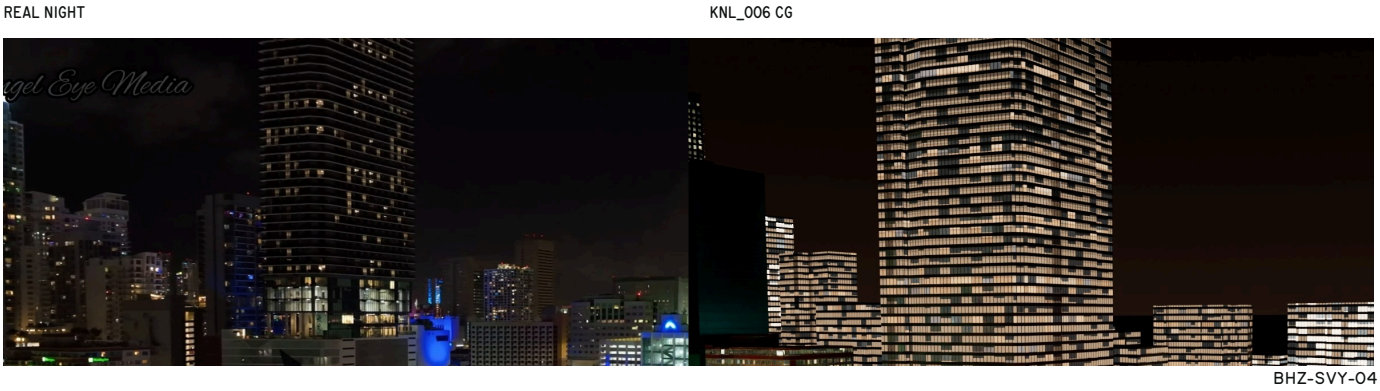


Figure 1.3-1. Window lighting: real photo against the existing CG set (+4 stops).

Table 1.3-1. Real night against the KNL_006 background

No.	Item	Real (survey)	KNL_006 now
1	Window lighting	About 15 to 25 % lit, irregular, dark floors, mixed colour	About 70 %, even warm white
2	Accent lighting	Freedom Tower red, blue and green facades, lit crowns	None
3	City beyond the set	Lights to the horizon	Black past the set
4	Sky	Low cloud lit orange-brown	Near black
5	Arena and park	Lit rim, LED band, white path lights	Lit box, dark park
6	Street lights	Amber on the grid, white LED on lots	Amber (matches)

Table 1.3-2. Where the data is

Item	Path (assets/set_biscayne/survey/)
Splat, native	splat/N4_v001/ckpts/
Splat, PLY	splat/N4_v001/ply/
Survey scene	scene/survey_v002.blend
Findings	reports/v001/FINDINGS.md

NOTE

Fixes from this table are proposals. None is in the shot yet.

FIND