Weigh Right Programme - Bombay CVSC

Bombay CVSC
Visual Simulations

24 January 2024
Version B

5C4353-WRP-04-GH-AB-1000

VISUAL SIMULATIONS - METHODOLOGY

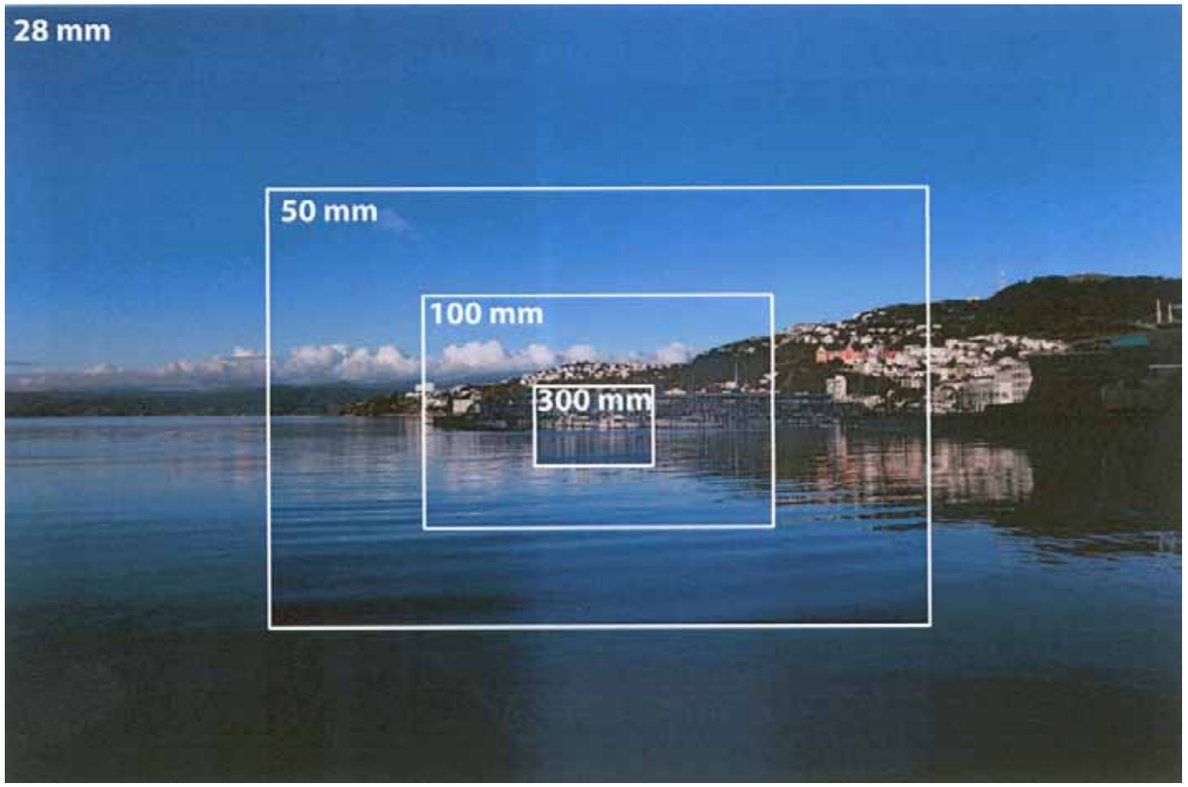
Site Visit and Photography

Site photographs were taken with a Canon digital SLR camera fitted with a 50mm focal length lens, mounted on a tripod and panoramic head. Photos were taken at a predetermined viewpoint, situated on public land. The location of the viewpoints is fixed by either hand held GPS or GPS units built in to the camera.

NZILA Guidelines and Panorama Preparation

The visualisations have been produced in accordance with the NZILA Best Practice Guidelines for Visual Simulations (BPG 10.2).

Camera lenses of different focal lengths capture images with differing fields of view. To understand how illusions are created by different lens sizes, one must understand depth of field and how "depth of field" and "field of view" are related. As can be seen below (derived from Fig 9 of the NZILA BPG), a photo taken with a 28mm lens will provide a horizontal field of view of 65˚ - using a 50mm lens will provide a "cropped" (40˚) version of the same view. The same image size can also be achieved by taking multiple 50mm photos in "portrait" mode, and using digital stitching software to merge and crop to 65˚ or 40˚.



Focal Length and Depth of Field

Compositing

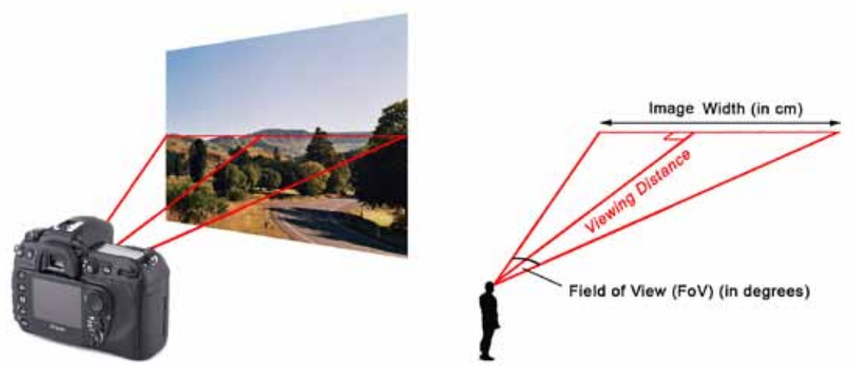
Virtual camera views were then created in 3D modelling software, and a combination of 3D contour data and 3D engineering drawings turned on in each of these views. These were then matched to the corresponding photographic panorama, using identifiable features in the landscape and the characteristics of the camera to match the two together. The visualisations were then assembled using graphic design software.

Recommended Image Reading Distance

Views which have a field of view of 90˚ should be viewed from a distance of 20 cm when printed at A3.
Views which have a field of view of 65˚ should be viewed from a distance of 31.5cm when printed at A3.
Views which have a field of view of 40˚ should be viewed from a distance of 55 cm when printed at A3.

This will ensure that each simulation is viewed as if standing on-site at the actual camera location, and is in accordance with Section 7.11 of the NZILA BPG (reproduced below). Users are encouraged to print these pages on A3 transparency, go to the viewpoint and hold at the specified reading distance in order to verify the methodology.

LENS	HORIZ FoV [1]	PAPER SIZE	ACTUAL IMAGE SIZE [2]	READING DISTANCE [3]
28mm	65°	A4	277mm W x 185mm H	215mm
		A3	400mm W x 267mm H	315mm
		A2	574mm W x 383mm H	450mm
50mm	40°	A4	277mm W x 185mm H	380mm
		A3	400mm W x 267mm H	550mm
		A2	574mm W x 383mm H	790mm



Geometry of Image Reading Distance

Aerial image captured September 13, 2016
Design as of November 3, 2023

LEGEND

Designation Boundary

Viewpoint Location (Indicative field of view)

0 10 25 50m
Scale 1:1000@A3

WAKA KOTAHI NZ TRANSPORT AGENCY
Weigh Right Programme - Bombay CVSC

Visual Simulation 1 - Viewpoint Location Plan

Date: 24.01.2024 | Version B | Drawn: MP | Checked: MD

VIEW FROM OUTSIDE 4 CHRISTA PLACE, LOOKING WEST ALONG CHRISTA PLACE TOWARDS THE PROPOSED CSCV SITE

VIEWPOINT DETAILS:

Coordinates: -37.189290, 174.991033
Eye Height: 1.5m
Date of Photography: 1:59pm, 11 January 2024 NZST
Photo taken using Canon EOS 800D

Horizontal Field of View: 40°
Vertical Field of View: 30°
Projection: Rectilinear
Image Reading Distance @ A3: 495mm

WAKA KOTAHI NZ TRANSPORT AGENCY
Weigh Right Programme - Bombay CVSC

VP 1: Original Image - Existing View

Date: 24.01.2024 | Version B | Drawn: LE | Checked: MD

VIEW FROM OUTSIDE 4 CHRISTA PLACE, LOOKING WEST ALONG CHRISTA PLACE TOWARDS THE PROPOSED CSCV SITE (MITIGATION PLANTING SHOWN AT AN AGE OF APPROXIMATELY 7-10 YEARS)

VIEWPOINT DETAILS:

Coordinates: -37.189290, 174.991033
Eye Height: 1.5m
Date of Photography: 1:59pm, 11 January 2024 NZST
Photo taken using Canon EOS 800D

Horizontal Field of View: 40°
Vertical Field of View: 30°
Projection: Rectilinear
Image Reading Distance @ A3: 495mm

WAKA KOTAHI NZ TRANSPORT AGENCY
Weigh Right Programme - Bombay CVSC

VP 1: Simulated View

Date: 24.01.2024 | Version B | Drawn: LE | Checked: MD