

323 – ERF 15712 WELLINGTON – STORMWATER

Run off Factors C

PRE – Development

MAP = 620 mm/year

100% Grass / Bare $C_B = 0.323$

$C_{pre} = (1.00 \times 0.323)$

$= 0.323$

POST – Development

15.08% Road $C_R = 0.95$

31.78% Light Industrial $C_I = 0.80$

4.13% Public Open $C_p = 0.40$

14.69% Institutional $C_i = 0.90$

34.32% Business $C_B = 0.70$

$C_{post} = (0.1508 \times 0.95) + (0.3178 \times 0.80) + (0.0413 \times 0.40) + (0.1469 \times 0.90) + (0.3432 \times 0.70)$

$= 0.14326 + 0.25424 + 0.01652 + 0.13221 + 0.24024$

$= 0.78647$

Area	= 204 200 m²
Industrial	= 64 900 m ²
Road	= 30 800 m ²
Public open Space	= 8 400 m ²
Business	= 70 100 m ²
Institutional	= 30 000 m ²

$$A_i = \underline{\underline{195800\text{m}^2}}$$

$$I = \frac{195800}{204200}$$

$$= 95.89\%$$

$$R_v = 0.05 + 0.9 (0.9589)$$

$$= 0.913$$

$$P_{1/2\text{ yr } 24} = 27.8 \text{ mm}$$

$$Q_{wv} = \left(\frac{27.8}{1000}\right)(0.913)(204200)$$

$$= 5182.94 \text{ m}^3$$

$$\text{Forebay} = \left(\frac{2.5}{1000}\right)(195800)$$

$$= 489.50 \text{ m}^3$$

$$\text{Wet Pond} = 0.5 \times Q_{wv} - F_{B1}$$

$$= (0.5)(5182.94) - F_{B1}$$

$$= 2591.47 \text{ m}^3 - F_{B1}$$

$$= 2591.47 - 489.50$$

$$= 2101.97\text{m}^3$$