Table 5. Harris St Pressure Washing

Discharged Items		
Dislodged materials including sediment and aggregate		
Debris accumulation		
Sediment-laden runoff		

3.1.2 Outcomes for each type of cleaning

The results of the initial infiltration testing before and after cleaning conclusively demonstrated that pressure washing was the most effective cleaning method in improving functional performance for the testing undertaken in this study (Figure 14 and Figure 15). The dry vacuum method was ineffective in restoring noticeable asset functionality, regardless of a sweeping or direct application of the vacuum head. The combination method of dry vacuuming and pressure was essentially equivalent to the stand-alone pressure washing method with no obvious benefit in vacuuming. Results for the baseline infiltration tests are provided in Table 6.

Table 6. Infiltration test results for initial testing

Location	Cleaning Method	Site	Infiltration rate (mm/hr)
Eades Place	Pressure washing (sweeping x2)	1	955
		2	447
		3	580
	Dry vacuuming	4	68
		5	68
		6	68
	Dry vacuuming and pressure washing (sweeping)	7	289
		8	1,222
		9	336
Harris St	Pressure washing (thorough x1)	10	2,910
		11	6,548
		12	3,667
		13	8,731
		14	8,334
		15	3,742
		16	1,291
		17	7,052
		18	7,334

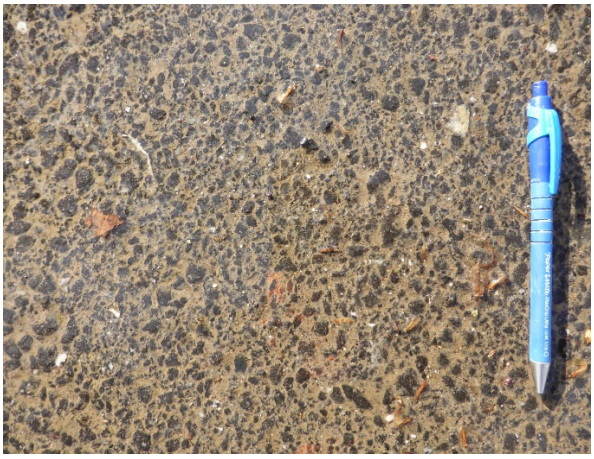

Figure 14. Before pressure washing (wet), Harris St

Figure 15. After pressure washing (wet), Harris St

3.1.3 Implications and recommendations for preferred cleaning approaches

The pressure washing method was applied in two different approaches; a broad sweeping stroke at a 45 degree angle and a more thorough, direct application (Section 2.2.2, Figure 13). This was done to understand the sensitivity of the cleaning method. Both methods were applied at Eades Place and only the thorough application was applied at Harris St.

The direct application proved to be highly effective approach in restoring infiltration rates compared to the sweeping application. This approach carries the following implications:

- Slower to apply by hand using existing equipment, therefore it may be desirable to use specialised large-scale application equipment (i.e. ride-on pressure washer).
- High pressures have the potential to dislodge permeable asphalt aggregate and there is a need for operator experience and expertise in determining a suitable pressure to balance effectiveness and impact on aggregate.
- Thorough application may theoretically lead to long term clogging by pushing surface pollutants into the porous aggregate matrix of the pavement although this depends on the design and configuration of the underlying layers.

It is recommended Council adopt pressure washing for future permeable pavement cleaning and commit to the following:

- Experiment with different water pressures to determine an optimal operating range.
- Investigate technologies for pressure washing large scale areas efficiently such as mobile or ride-on equipment. Consider dual pressure washing and suction technologies to remove existing debris, limit runoff, and minimise risk of pushing surface pollutants into the porous aggregate matrix of the pavement.