BARRIER BEACH AT NEW BRIGHTON

AGGRADATION (Summer Beach Profile)

1. The refraction of waves around Banks Peninsula, along with the shallow bathymetry of Pegasus Bay means waves typically approach the beach with weak energy, long wave lengths and a wave period of 7 to 11 seconds between waves.

2. These conditions mean that constructive waves with a typical height of 0.5 - 2.0 metres dominate at New Brighton Beach

3. Constructive waves tend to travel up the beach face with a spilling action. They have a strong swash moving forward up the beach slope after the waves break, pushing small amounts of sand up to the berm or beach terrace.

4. The backwash (when the swash stops moving forward and starts moving down the beach face) is weaker due to percolation (the long wave period means much of the water filters into the sand) and also the gentler slope of the beach profile during constructive phases, meaning the backwash travels slowly with less energy.

5. Over time, constructive waves deposit sand on the beach berm. This provides the sand for dune development.

berm

SWASH

backwash

DEGRADATION (Winter Beach Profile)

1. During storm phases, destructive waves occur. These waves are steeper, have a short wave period of 4 to 7 seconds, and break on the beach face with a plunging action.

2. These factors mean that the backwash is stronger than the swash, with less forward swash movement, a steeper beach face to accelerate the backwash, and a saturated berm that prevents percolation

BACKWASH

3. Destructive waves remove sand from the berm and transport it to an off-shore sand bar, at New Brighton Beach, this is typically 100m out at sea. when calmer conditions return, this sand is returned to the berm.