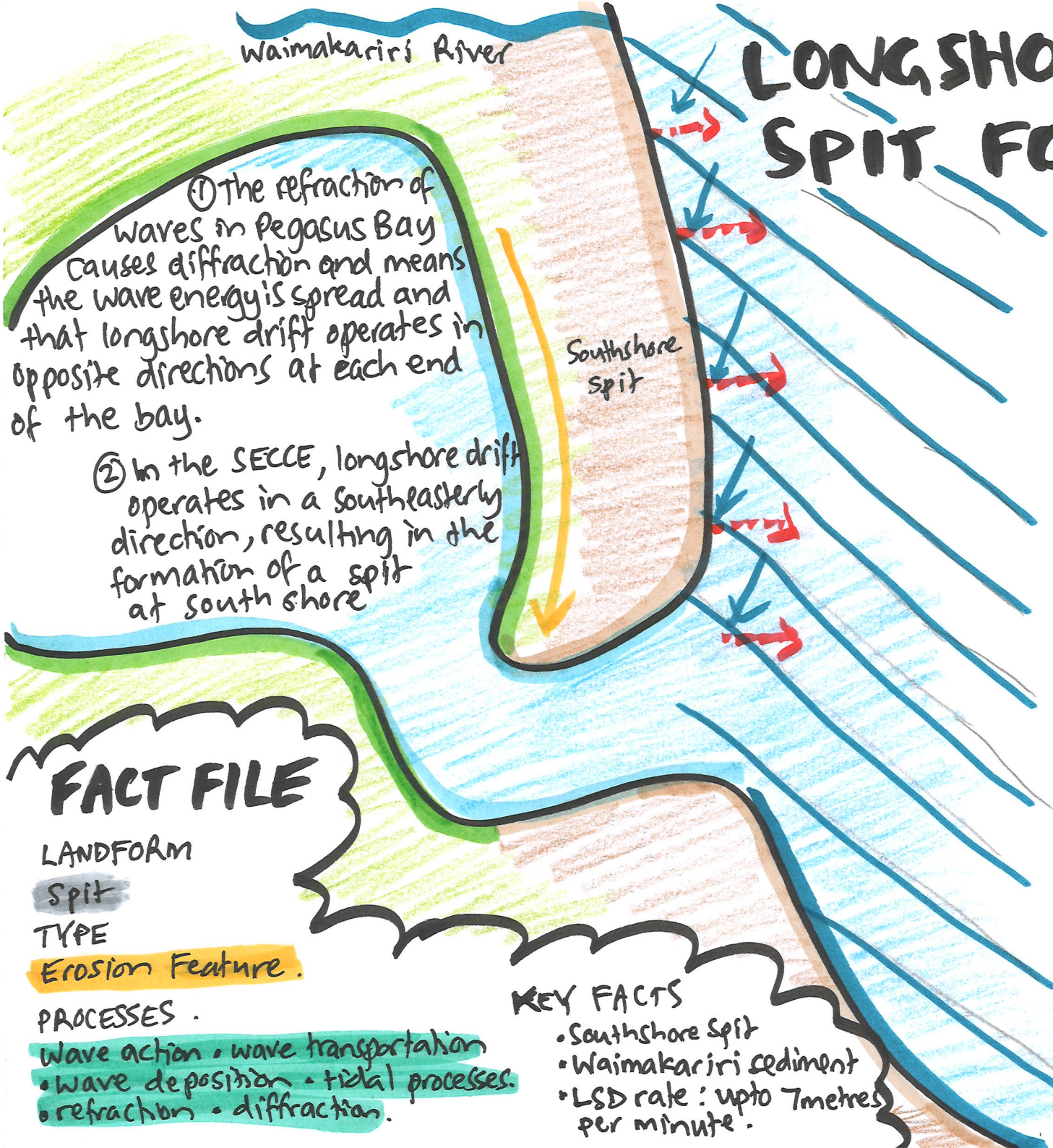
LONGSHORE DRIFT & SPIT FORMATION



① The refraction of waves in Pegasus Bay causes diffraction and means the wave energy is spread and that longshore drift operates in opposite directions at each end of the bay.

② In the SECCE, longshore drift operates in a southeasterly direction, resulting in the formation of a spit at south shore

③ In the SECCE, waves effectively approach the beach in a WSW direction (bearing 247°).

④ The swash after the waves break at the shore, travel up the beach face at an angle.

⑤ The backwash drains away down the beach face at 90°, or perpendicular to the beach face, due to gravity.

⑥ This zig-zag process, repeats over time, transporting sediment (mainly quartz and greywacke, brought into the coastal system through fluvial deposition from the Waimakariri River.

⑦ The overall effect is the Southshore spit grows, but is limited by the tidal outflow of the Avon-Heathcote estuary. The rate of longshore drift can reach up to 7 metres per minute if the conditions are right.

FACT FILE

LANDFORM
Spit

TYPE
Erosion Feature.

PROCESSES.
Wave action • wave transportation • wave deposition • tidal processes. • refraction • diffraction.

KEY FACTS
- Southshore Spit
- Waimakariri sediment
- LSD rate: upto 7metres per minute.