

# Cabbage Tree Bay Rising Main.

Improving the resilience of the sewer rising main that runs along Marine Parade, Manly is progressing. The next step is to install a sewer liner into the rising main.

## A bit of history

### Building the sewer

In the late 1890's the Department of Public Works constructed a trunk sewer main for Manly that included an in tunnel pipeline from Ashburner Street to Cabbage Tree Bay and from there a pipeline running along the rock shelf to Shelly Beach and from there a tunnel pipeline through the headland to an ocean outfall at Blue Fish Point. In 1903, the responsibility for managing this sewer was passed to the Metropolitan Water and Sewerage Drainage Board.

In 1933, Public Works and the Board completed the constructed the Northern Suburbs Ocean Outfall Sewer, a new trunk sewer collecting the wastewater from north side of the harbour and upper Parramatta River and transferring it to North Head. This sewer crossing the Spit and running beneath Fairlight.

In 1970, The Board discontinued discharges at the ocean outfall by intercepting Manly's wastewater at Shelly Beach and pumping it back to Northern Suburbs Ocean Outfall Sewer at Darley Road. Excess flows during wet weather still being discharged at the outfall. The pumping back is achieved by a pumping station located at Shelly Beach and a rising main that runs along the promenade (red line in the map).

In 2001, Sydney Water diverted most of the excess wet weather flows to the North Side Storage Tunnel.



## Storms and coastal hazard

East coast lows bring strong winds and large waves to Cabbage Tree Bay. The storm surge can over top the seawall leading to flooding of the pathway and properties. The surge can damage property. Significant damage occurred in May 1974 and June 2016.



The trunk sewer main from Manly to Shelly Beach and the rising main back to Manly are protected from the sea by the seawall. In the vicinity of Bower Lane the rising main runs outside the seawall. This section of the rising main is concrete encased and when constructed was founded in sand. The storms have removed sand undermining the concrete encasement.

## Improving resilience

### Underpinning

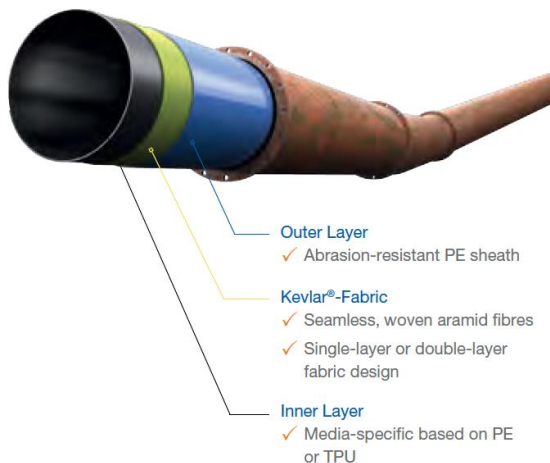
The rising main at Bower Lane shows signs of encasement deterioration with longitudinal cracking that is thought to be due to undermining. To prevent further deterioration this section was propped down to rock.

In 2019, the props were removed and the encasement underpinned with concrete down to rock. The location of the rising main (highlighted in blue) and new concrete underpinning can be seen in the photo.



## Sewer lining

To further increase the resilience of the rising main, we hope to install a liner within the pipeline. A sewer liner will reduce the potential for pipe leakage and failure.



Right now, we're preparing to inspect the rising main with CCTV to ensure the pipeline is suitable for lining. We also need to determine its exact locations and we will use a sonde to do this. We need to know where to dig to expose and cut into the rising main to start and terminate the liner. We are having a bit of an issue with the scour valves that we will use to drain the wastewater from the rising main so that we can put the CCTV in. We expect to fix this issue shortly.

Liners are wide ranging in structural strength and purpose. They are generally used as a no dig solution for pipeline renewal. Installation of a liner into the rising main at Cabbage Tree Bay will decrease the risk of wastewater discharge to the Bay.

## Seawall and Walkway

Our General Manager and Head of System and Asset Planning recently met with Ray Brownlee Northern Beaches Council GM to discuss collaboration in planning for the Manly to Shelly Beach Promenade. In response to this meeting we are combing archives to determine who owns and has maintenance responsibility for the seawall and the walkway.