

## Conclusions

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This report documents the findings of the SPRSEMP Stage 1 assessment. The outcomes of the shoreline processes assessments presented in this report are to be considered as part of ongoing work to develop shoreline management strategies within the South Pine River study area for MBRC's consideration. Assessment elements which have been documented within the report include:

- Review of the planning and legislative framework.
- Discussion of fluvial processes which influence bank erosion, resulting channel meandering and river migration.
- Assessment of the Geomorphic Processes within the South Pine River study area, including:
  - Literature review of past studies;
  - Site inspections, classifying the erosion risk for the various reaches within the study area;
  - Assessment of historic riverbank migration; and
  - Hydrodynamic modelling.
- Definition of erosion prone areas within the study area.

The legislation, regulations and policies described in this report are current as at the time of writing. Further consideration will need to be given to planning and legislative requirements when implementing options promoted in this study. The content of this report is not considered a comprehensive list of all applicable statutory instruments but rather a starting point for determining considerations at the time of approval and implementation of a preferred management strategy.

Assessment of geomorphic processes, causes of erosion, and future erosion risks suggest a number of existing private and public assets are presently well within the calculated erosion prone area. Many of these areas are currently not protected by terminal structures and therefore may be at risk due to future riverbank erosion. Ongoing protection of these assets throughout the planning period will require strategic management and adaptation to potentially changing environments. As such, management solutions focusing on for varying timescales (short and long term) should be considered as part of the Stage 2 assessment. Consideration should also be given to exclude siting new infrastructure within the identified erosion prone area.

Shoreline erosion management options to be considered when developing shoreline management strategies fall into two general categories, namely:

- Undertake works to hold or improve the present river bank stability/alignment, thereby preventing future meandering/migration of the river; or
- Allow the river to continue meandering in such a way that the natural processes would maintain the adjacent riverbank characteristics and amenity, but at the expense of existing land and infrastructure.

The strategies that fall into the latter "retreat" category can be difficult to implement and may be met with strong opposition in developed areas. MBRC should consider its position regarding retreat

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as part of a long term coastal hazard adaptation strategy. In some instances, a combination of the above 'general' management strategies may be required to address the changing environment and associated risks into the future. For example, during the Stage 2 assessment, short term management measures along some reaches may recommend no engineering works, allowing the riverbank to continue meandering. Long-term management may however require engineering works to stabilise the river bank if specified erosion trigger locations are exceeded.