

# 5A

Erosion

# Waikanae Beach

Central Adaptation Area

**Takutai  
Kāpiti.**

## Pathway 1

MCDA  
Score **71**

MCDA  
Ranking **1**

### Short term Enhance

Increased dune resilience by foreshore and backshore planting, increased community education and emergency management.

### Medium term Soft Engineering Protection (Dune reconstruction)

Reconstructing the dune by distributing imported sand across the existing dune and reshaping to improve crest elevation and slope. The reshaped dune could be planted to optimise protection.

### Long term Soft Engineering Protection (Renourishment)

Importing sand and distributing it on the foreshore to supply more bulk to the beach profile.

Cost + Loss  
**\$22.1M**

Cost + Loss  
Ranking  
**1**

Damages  
Avoided  
**\$30.2M**

Total Pathway Cost

**\$22M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Properties Still  
Exposed (2130)  
**0**

## Pathway 6

MCDA  
Score **64**

MCDA  
Ranking **2**

### Short term Enhance and Soft Engineering (Dune reconstruction)

Increased dune resilience by foreshore and backshore planting and dune reconstruction, increased community education and emergency management.

### Medium term Retreat

Proactively and progressively retreating properties as they become impacted by the hazard.

### Long term Retreat

Proactively and progressively retreating properties as they become impacted by the hazard.

Cost + Loss  
**\$70.8M**

Cost + Loss  
Ranking  
**2**

Damages  
Avoided  
**\$30.2M**

Total Pathway Cost

**\$70.8M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Properties Still  
Exposed (2130)  
**0**

## Pathway 2

MCDA  
Score **60**

MCDA  
Ranking **3**

### Short term Enhance and Soft Engineering (Dune reconstruction)

Increased dune resilience by foreshore and backshore planting and dune reconstruction, increased community education and emergency management.

### Medium term Enhance and Soft Engineering (Renourishment)

Increased dune resilience by foreshore and backshore planting and beach renourishment, increased community education and emergency management.

### Long term Hard Engineering – Sea Wall

Sea wall along the front of the settlement.

Cost + Loss  
**\$71.2M**

Cost + Loss  
Ranking  
**3**

Damages  
Avoided  
**\$30.2M**

Total Pathway Cost

**\$71.2M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Properties Still  
Exposed (2130)  
**0**

# 5B

Inundation

# Waikanae Beach

Central Adaptation Area

**Takutai  
Kāpiti.**

## Pathway 5

MCDA  
Score **62**

MCDA  
Ranking **1**

### Short term Enhance

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

### Medium term Protect – Additional Hard Protection

Installation of flood gates, pump stations and stopbanks to prevent sea water entering the settlements.

### Long term Retreat

Proactively and progressively retreating properties as they become impacted by the hazard.

Cost + Loss  
**\$938.5M**

Cost + Loss  
Ranking  
**3**

Damages  
Avoided  
**\$7.5M**

Total Pathway Cost

**\$935.4M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Buildings Still  
Exposed (2130)  
**68**

## Pathway 3

MCDA  
Score **59**

MCDA  
Ranking **2**

### Short term Enhance

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

### Medium term Enhance

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

### Long term Accommodate

Proactively raise floors of homes which could be flooded.

Cost + Loss  
**\$61.3M**

Cost + Loss  
Ranking  
**1**

Damages  
Avoided  
**\$7.5M**

Total Pathway Cost

**\$58.2M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Buildings Still  
Exposed (2130)  
**68**

## Pathway 4

MCDA  
Score **57**

MCDA  
Ranking **3**

### Short term Enhance

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

### Medium term Accommodate

Proactively raise floors of homes which could be flooded.

### Long term Retreat

Proactively and progressively retreating properties as they become impacted by the hazard.

Cost + Loss  
**\$361.2M**

Cost + Loss  
Ranking  
**2**

Damages  
Avoided  
**\$7.3M**

Total Pathway Cost

**\$357.9M**

Damages  
Avoided  
Ranking  
**3**

Number of  
Buildings Still  
Exposed (2130)  
**68**

**6A**

Erosion

**6B**

Inundation

# Waikanae Estuary

Central Adaptation Area

**Takutai  
Kāpiti.**

## Pathway 5

MCDA  
Score **86**MCDA  
Ranking **1**

\* This management unit is based on the Waikanae Estuary Scientific Reserve where there are no properties.

**Short term****Enhance**

Wetland planting and management to increase resilience, increase community education and emergency management.

**Medium term****Retreat**

Retreating recreational infrastructure to make way for wetland migration.

**Long term****Retreat**

Retreating recreational infrastructure to make way for wetland migration.

Cost + Loss

**\$11.6M**Cost + Loss  
Ranking**1**Damages  
Avoided**NA**Damages  
Avoided  
Ranking**NA**Number of  
Properties Still  
Exposed (2130)**0\***

Total Pathway Cost

**\$11.6M**

## Pathway 3

MCDA  
Score **78**MCDA  
Ranking **2****Short term****Enhance**

Wetland planting and management to increase resilience, increase community education and emergency management.

**Medium term****Enhance**

Wetland planting and management to increase resilience, increase community education and emergency management.

**Long term****Protect –  
Bank Protection**

Hard bank protection around the edge of the estuary to stabilise the edge.

Cost + Loss

**\$14.4M**Cost + Loss  
Ranking**3**Damages  
Avoided**NA**Damages  
Avoided  
Ranking**NA**Number of  
Properties Still  
Exposed (2130)**0\***

Total Pathway Cost

**\$14.4M**

## Pathway 1

MCDA  
Score **61**MCDA  
Ranking **3****Short term****Status Quo**

Maintain existing management of infrastructure/wetlands, increase community education and emergency management.

**Medium term****Enhance**

Wetland planting and management to increase resilience, increase community education and emergency management.

**Long term****Enhance**

Wetland planting and management to increase resilience, increase community education and emergency management.

Cost + Loss

**\$12M**Cost + Loss  
Ranking**2**Damages  
Avoided**NA**Damages  
Avoided  
Ranking**NA**Number of  
Properties Still  
Exposed (2130)**0\***

Total Pathway Cost

**\$12M**

# 7B

Inundation

# Otaihanga

Central Adaptation Area

## Takutai Kāpiti.

## Pathway 2

MCDA  
Score **65**

MCDA  
Ranking **1**

### Short term

Enhance

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

### Medium term

Enhance

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

### Long term

Accommodate

Proactively raise floors of homes which could be flooded, flood proof homes and infrastructure.

Cost + Loss

**\$21.3M**

Cost + Loss  
Ranking

**1**

Damages  
Avoided

**\$3M**

Damages  
Avoided  
Ranking

**3**

Number of  
Buildings Still  
Exposed (2130)

**0**

Total Pathway Cost

**\$16.6M**

## Pathway 4

MCDA  
Score **56**

MCDA  
Ranking **2**

### Short term

Protect  
(Additional Hard  
Protection)

Installation of floodgates, pump stations and stopbanks to prevent sea water entering the settlements.

### Medium term

Enhance

Enhance existing inundation protection, and wetlands, and increase community education and emergency management.

### Long term

Retreat

Proactively moving people out of the way of the hazard.

Cost + Loss

**\$182.5M**

Cost + Loss  
Ranking

**3**

Damages  
Avoided

**\$6.7M**

Damages  
Avoided  
Ranking

**1**

Number of  
Buildings Still  
Exposed (2130)

**0**

Total Pathway Cost

**\$181.6M**

## Pathway 5

MCDA  
Score **50**

MCDA  
Ranking **3**

### Short term

Enhance

Enhance existing inundation protection, and wetlands, and increase community education and emergency management.

### Medium term

Protect  
(Additional Hard  
Protection)

Installation of floodgates, pump stations and stopbanks to prevent sea water entering the settlements.

### Long term

Protect  
(Additional Hard  
Protection)

Installation of floodgates, pump stations and stopbanks to prevent sea water entering the settlements.

Cost + Loss

**\$33.3M**

Cost + Loss  
Ranking

**2**

Damages  
Avoided

**\$4.7M**

Damages  
Avoided  
Ranking

**2**

Number of  
Buildings Still  
Exposed (2130)

**12**

Total Pathway Cost

**\$30.4M**

# 8A

Erosion

# Paraparaumu Beach

Central Adaptation Area

## Takutai Kāpiti.

## Pathway 1

MCDA Score **68**

MCDA Ranking **1**

### Short term Enhance

Increased dune resilience by foreshore and backshore planting, increased community education and emergency management.

### Medium term Soft Engineering Protection (Dune reconstruction)

Reconstructing the dune by distributing imported sand across the existing dune and reshaping to improve crest elevation and slope. The reshaped dune could be planted to optimise protection.

### Long term Soft Engineering Protection (Renourishment)

Beach renourishment – Importing sand and distributing it on the foreshore to supply more bulk to the beach profile.

Cost + Loss  
**\$19.8M**

Cost + Loss  
Ranking  
**1**

Damages  
Avoided  
**\$21.7M**

Total Pathway Cost

**\$19.8M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Properties Still  
Exposed (2130)  
**1**

## Pathway 6

MCDA Score **64**

MCDA Ranking **2**

### Short term Enhance and Soft Engineering Protection (Dune reconstruction)

Increased dune resilience by foreshore and backshore planting and dune reconstruction, increased community education and emergency management.

### Medium term Retreat

Proactively and progressively retreating properties as they become impacted by the hazard.

### Long term Retreat

Proactively and progressively retreating properties as they become impacted by the hazard.

Cost + Loss  
**\$20.6M**

Cost + Loss  
Ranking  
**2**

Damages  
Avoided  
**\$21.7M**

Total Pathway Cost

**\$20.6M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Properties Still  
Exposed (2130)  
**0**

## Pathway 2

MCDA Score **60**

MCDA Ranking **3**

### Short term Enhance and Soft Engineering Protection (Dune reconstruction)

Increased dune resilience by foreshore and backshore planting and dune reconstruction, increased community education and emergency management.

### Medium term Enhance and Soft Engineering Protection (Renourishment)

Increased dune resilience by foreshore and backshore planting and beach renourishment, increased community education and emergency management.

### Long term Hard Engineering – Sea Wall

Sea wall along the front of the settlement.

Cost + Loss  
**\$66.8M**

Cost + Loss  
Ranking  
**3**

Damages  
Avoided  
**\$21.7M**

Total Pathway Cost

**\$66.7M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Properties Still  
Exposed (2130)  
**1**

# 8B

Inundation

# Paraparaumu

Central Adaptation Area

## Takutai Kāpiti.

## Pathway 3

MCDA  
Score **62**

MCDA  
Ranking **1**

**Short term**  
**Enhance**

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

**Medium term**  
**Enhance**

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

**Long term**  
**Accommodate**

Proactively raise floors of homes which could be flooded, flood proof homes and infrastructure.

Cost + Loss  
**\$56.3M**

Cost + Loss  
Ranking  
**1**

Damages  
Avoided  
**\$5.9M**

Total Pathway Cost

**\$53.4M**

Damages  
Avoided  
Ranking  
**3**

Number of  
Buildings Still  
Exposed (2130)  
**84**

## Pathway 4

MCDA  
Score **57**

MCDA  
Ranking **2**

**Short term**  
**Enhance**

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

**Medium term**  
**Accommodate**

Proactively raise floors of homes which could be flooded, flood proof homes and infrastructure.

**Long term**  
**Retreat**

Proactively and progressively retreating properties as they become impacted by the hazard.

Cost + Loss  
**\$827M**

Cost + Loss  
Ranking  
**3**

Damages  
Avoided  
**\$6M**

Total Pathway Cost

**\$824.2M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Buildings Still  
Exposed (2130)  
**84**

## Pathway 5

MCDA  
Score **56**

MCDA  
Ranking **3**

**Short term**  
**Enhance**

Enhance existing inundation protection, and coastal wetlands, and increase community education and emergency management.

**Medium term**  
**Protect –  
Additional Hard  
Protection**

Installation of floodgates, pump stations and stopbanks to prevent sea water entering the settlements.

**Long term**  
**Retreat**

Proactively and progressively retreating properties as they become impacted by the hazard.

Cost + Loss  
**\$826.7M**

Cost + Loss  
Ranking  
**2**

Damages  
Avoided  
**\$6M**

Total Pathway Cost

**\$824M**

Damages  
Avoided  
Ranking  
**1=**

Number of  
Buildings Still  
Exposed (2130)  
**84**