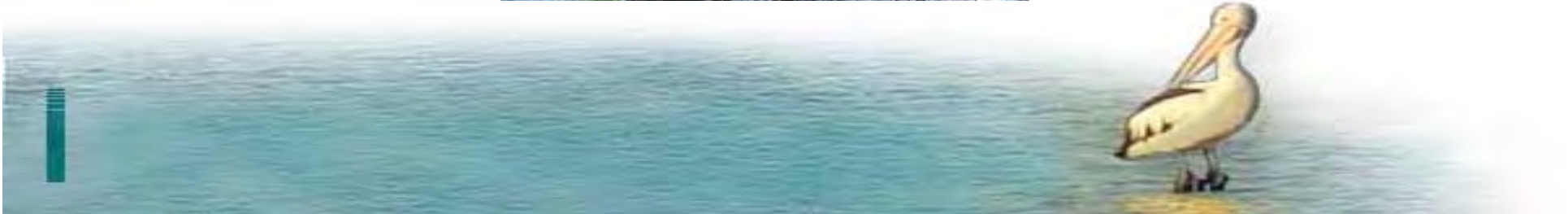




# The Coorong District Council

## Riverbank Slumping – More Than It's Cracked Up to Be!

Presented by Desma Fraser & Stephen Yam





# Introduction

- The Coorong District Council was formed in May 1997 as a result of the amalgamation of the District Councils of Peake, Coonalpyn Downs and Meningie.
- Largest Council area in the state: 8,836 square kilometres, and has a population of approximately 6,000.
- The Coorong District Council employs 81 staff members; comprising 34 administrative and 47 outdoor employees.
- The Coorong District Council has been experiencing drought conditions and deleterious water issues associated with the River Murray and Lower Lakes due to inadequate inflows for several years.





## Introduction (cont.)

- A rise in mental health issues.
- The local environment upon which the local economy and social well are heavily reliant, has been forced into an detrimental state.
- One recent and unforeseen environmental risk that has occurred recently as a result of the low water levels in the River Murray is riverbank slumping and cracking.





## Risk/Hazard Identification

- Due to a severe lack of water flowing down the River Murray a problem now exists that Council had not encountered before. This issue, known as ‘slumping’ can be described as river bank levees collapsing into the river, taking with them any infrastructure that private property owners, Council or other agencies had installed on these areas.
- The Coorong District Council made a commitment to its community by taking the initiative to develop a system to identify potential slump areas, by implementing controls to manage these areas and to continue to monitor and review these incidents.





## Risk/Hazard Identification (cont.)

- Identify risk exposures was to identify the areas that were being affected by this unforeseen environmental risk.
- Having identified potential risk areas, Council undertook a process of conducting physical inspections and creating detailed records of the findings.
- Council also developed a procedure to educate staff on how to collect information from the public for the purposes of further identifying or monitoring possible risk areas.





# Risk/Hazard Identification

## RISK/HAZARD/LIABILITY ISSUE IDENTIFICATION

The first significant riverbank slumping incident occurs at Murray Bridge on 4 February 2009

Affected Councils immediately form a Local Committee Action Group

Risk areas identified, physically inspected & detailed records taken

Riverbank Assessment Pro-Forma developed

Riverbank & Lakebed Slumping Incident Reporting Procedure developed & implemented. Riverbank Slumping Register established



# Risk/Hazard Identification

Appendix 2



COORONG DISTRICT COUNCIL

## RIVERBANK ASSESSMENT

Site name:	
Inspection Date:	
Time:	
Inspectors:	
Ownership status:	
Previous Inspection:	

SITE DETAILS			
Site name:			
Site address:			
Site size:			
Weather conditions:			
Land use at and adjacent to the site: (circle all that apply)			
Residential	Commercial	Passive recreation	Active recreation
Green space undeveloped	Vehicular Access		

Risk Assessment Matrix					
<i>Risk Rating: The risk rating matrix will determine a rating, based on likelihood and consequence</i>					
Likelihood	CONSEQUENCE				
	Insignificant	Minor	Moderate	Major	Catastrophe
A (almost certain)	H	H	E	E	E
B (Likely)	M	H	H	E	E
C (Possible)	L	M	H	E	E
D (Unlikely)	L	L	M	H	E
E (Rare)	L	L	M	H	H

### RATING

E = Extreme risk: immediate and urgent action required. CEO to be briefed.  
H = High risk: immediate action required. Asset Services Manager to be briefed.  
M = Moderate risk: management responsibility must be specified  
L = Low risk: manage by routine procedures.







# Risk/Hazard Identification (cont.)

The Coorong District Council

## Riverbank Lakebank Slump Register

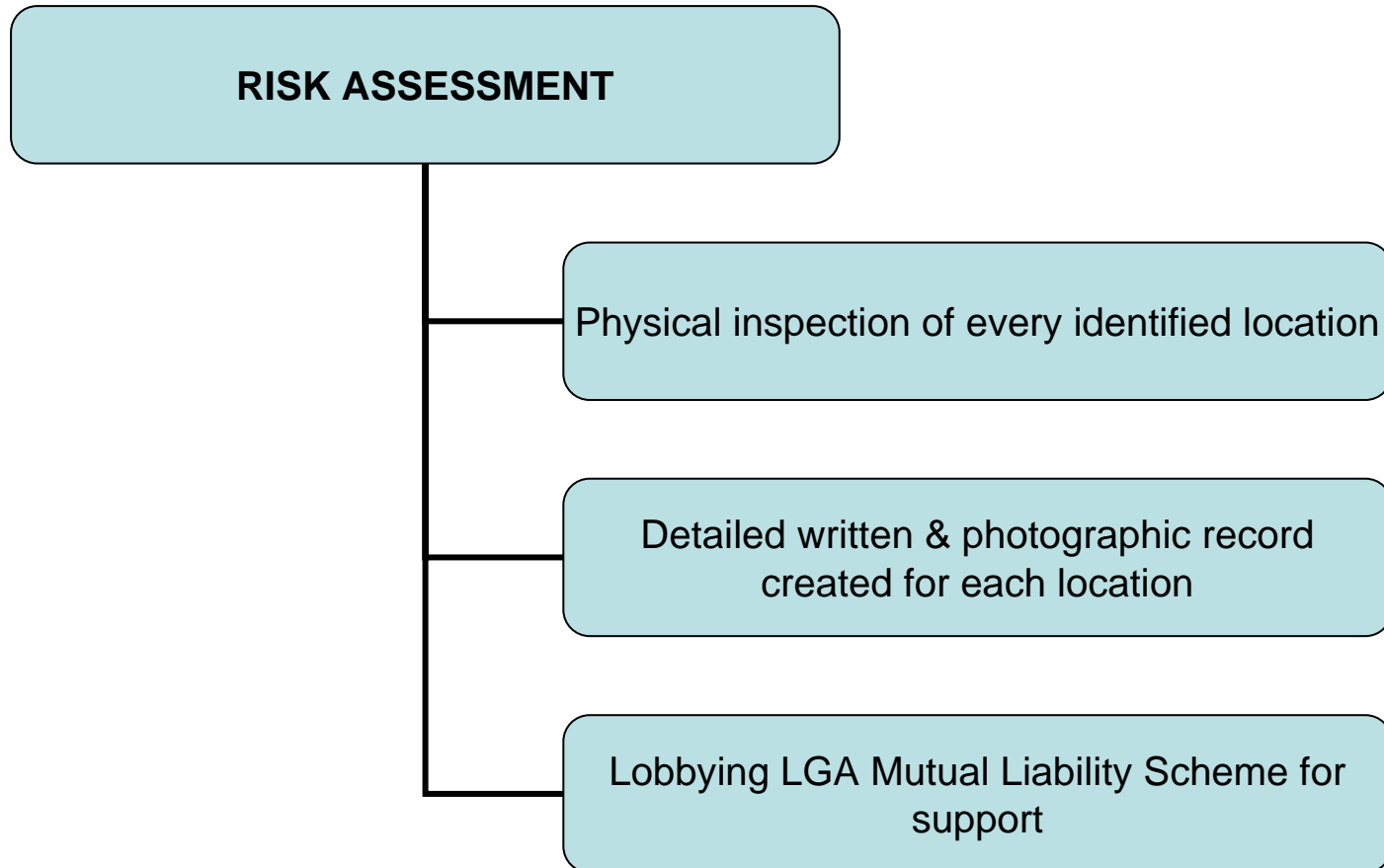
No.	Date Discovered	Location	Address	Owner	Contact	Reported to CDC	Origin	MAS Inspected	Risk Assessment	Notes
01	3/03/2009	Murrayview Community Reserve	Murrayview Reserve	Council	85723611		Resident	10/03/2009	Yes	I boat and 1 tree lost. No injuries.
02	21/03/2009	Washpool	Lot 25, Washpool Rd	TJ & LE Gould	8376 4817	6/03/2009	DTEI	8/03/2009	No	20m of riverbank and lower part of boat ramp slumped. Photos taken. No asset loss or injuries.
03	3/03/2009	Tailem Bend	Riverfront Reserve	Council	85723611	3/03/2009	Council	10/03/2009	Yes	Riverfront concrete footpath unstable. No asset loss or injuries.
04	11/03/2009	Placid Estates	Lot 21, Placid Estates Rd	IM & RM Manser		11/03/2009	DTEI	11/03/2009	No	Private property
05										

Appendix 6



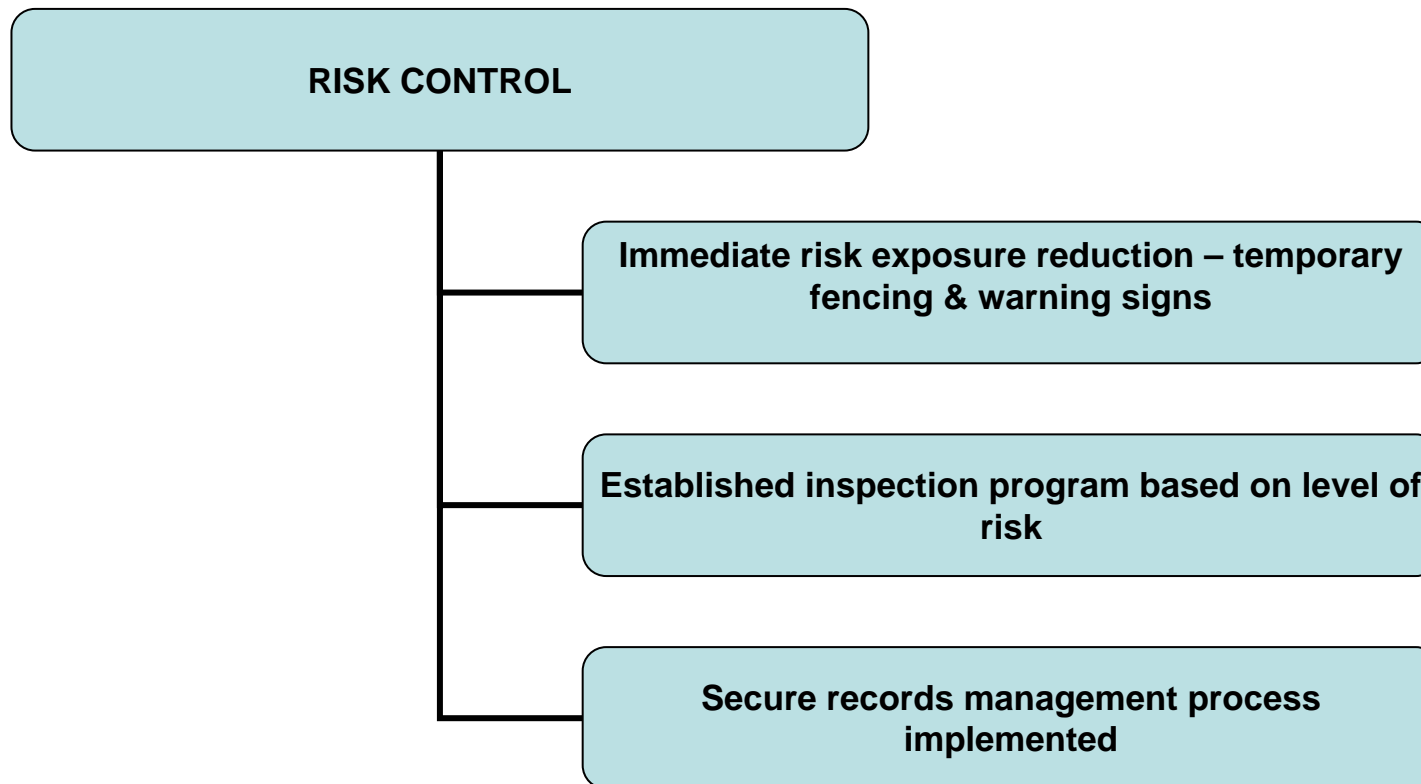


# RISK ASSESSMENT



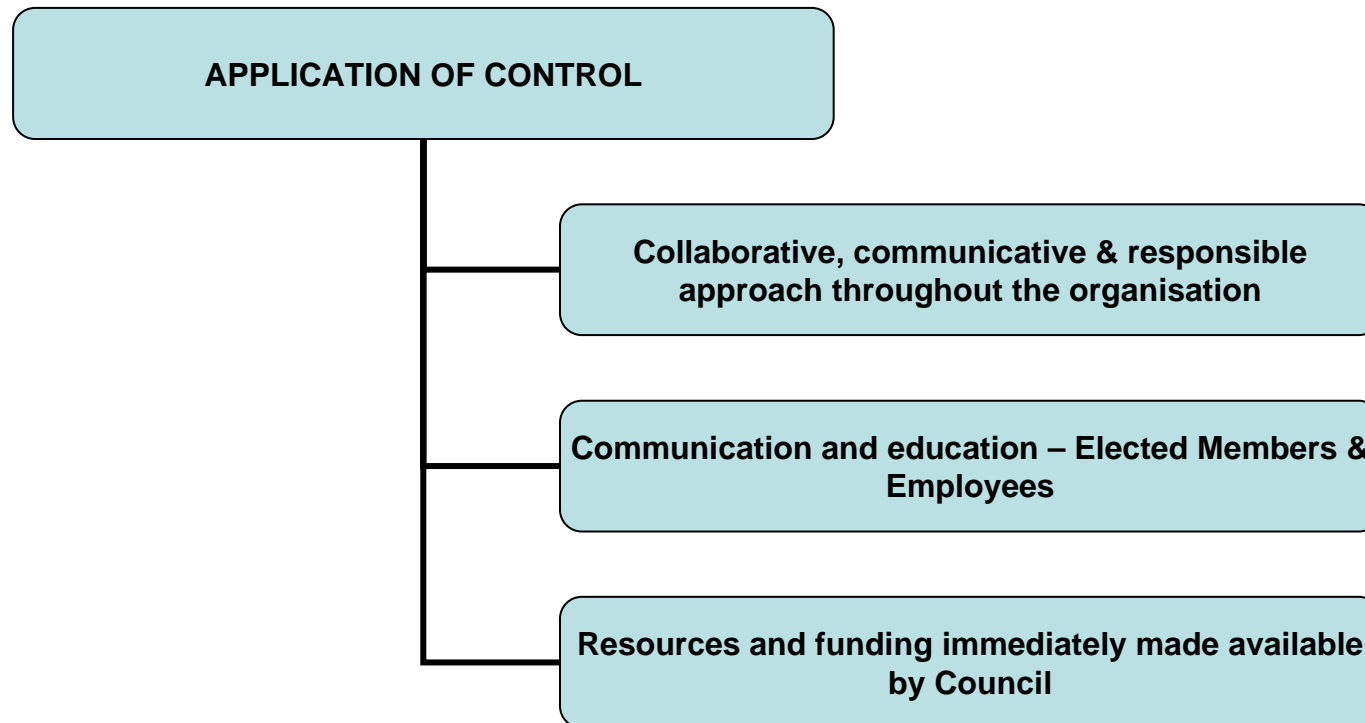


# Risk Control





# Application of Control





# Application of Control

The Coorong District Council

Ordinary Council meeting Agenda



18 August 2009

Appendix 10

## 2.3 Risk Management – Riverbank Slumping

The Taillem Bend Community Facilities team is continuing to undertake inspections of riverbanks that have been subject to slumping. A summary of the most recent inspections is as below:

Area	Last Inspected	Comments
Dickson Reserve (footpath & spoon drain adjacent Rowing Club Area)	23/07/2009	No changes since inspection on 01/07/2009.
Gooden Reserve	23/07/2009	Cracking adjacent to pump infrastructure has again increased in length & depth, possibly due to water run off from area above crack. Barrier mesh remains in place.
Murrayview Estate Reserve Bay 1 & car park	23/07/2009	Increase in cracking in far northern area. Sealed area in car park starting to crack. Signage & mesh installed.
Murrayview Estate Bays 2 & 3 (area affected by previous slumping)	23/07/2009	Small amount of crumbling of embankment in Bay 2. Signage and mesh remain in place.
Wellington East Levee Bank	23/07/2009	Subsidence & crack width increased notably in the area north of the ferry, particularly the width of the cracks. Gates & signage remain in place.
Fred's Landing	23/07/2009	No signs of instability or slumping. Some normal erosion evident.
Washpool Community Reserve	23/07/2009	No change evident since 01/07/2009.

## 2.4 Risk Management Performance Indicators

Key Performance Indicator	Month July	2009/10 YTD	2008/2009 TOTAL	2007/2008 TOTAL	2006/2007 TOTAL
Public Incident Report	0	0	6	8	9
Public Liability Claim/Damage Request	0	0	1	2	1
General Insurance Claims	2	2	10	3	8
<b>Total Claims/Incidents</b>	<b>2</b>	<b>2</b>	<b>17</b>	<b>13</b>	<b>18</b>

CS-2





# Application of Control

Appendix 4

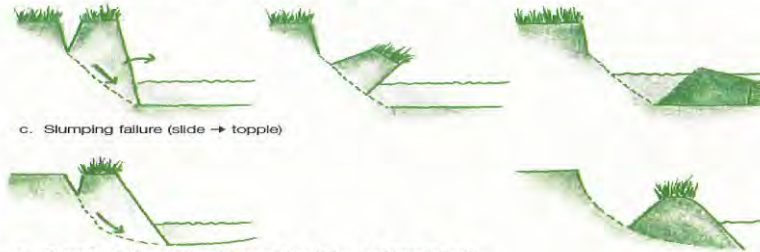
## RIVERBANK & LAKEBANK SLUMPING INCIDENT REPORTING PROCEDURE



### INTRODUCTION:

There has been numerous riverbank slumping events recently. The most publicly known being the riverbank slumping incident at Murray Bridge's Long Island Marina in February 2009.

Slumping occurs when blocks of the bank collapse as a result of scour processes. There are many reasons why this may occur, including loss of positive pressure against the bank due to lowering river levels and too much pressure on bank edges caused by man-made developments.



c. Slumping failure (slide → topple)

c. Slumping failure (slope failure → toe failure → base failure)

Broken lines indicate failure planes



Slumping area at Murrayview



Riverbank cracking at Murrayview





# Application of Control

Should you be contacted or approached about riverbank or lakebank slumping, please note the following procedures.

## GENERAL ENQUIRY / INFORMATION:

The Department for Water, Land and Biodiversity Conservation (DWLBC) is the lead Government agency for all riverbank slumping incidents.

If they require information, please ask them to contact:  
**Riverbank Slumping Incident Hotline 8531 0710**  
**Department for Water, Land & Biodiversity Conservation 8539 2100**

You may refer them to:

- The information in Appendix 1 which has been advertised by DWLBC in The Advertiser on Saturday 7 March and in the Murray Valley on 10 March 2009.
- Letter posted out by DWLBC to Landholders, as shown in Appendix 2.

If they wish to speak to a Council staff member, you may refer them to me.

## REPORTING SLUMPING AND/OR CRACKING:

### Procedure for Customer Service:

To report slumping and signs of cracking, please:

- Collect and write down information as per the "Riverbank Slumping Public Report" as attached in Appendix 3.
- Scan form for Records and email a copy to Manager Asset Services.
- Relay report to Ian Millard immediately.

If it "sounds" major and I am out of the office, please call and let me know immediately. We have a slumping inspection process and checklist in place. Ian and Desma have already commenced Slumping Inspections on Council reserves.

### Procedure for Asset Services Technical Officer:

- Update Riverbank Slump Register.
- Schedule and carry out inspection with Risk Management Officer.
- Provide copy of completed Inspection Form to Manager Asset Services.

## QUESTIONS

Any questions, from public or staff, just holler my way. Thanks all.  
**STEPHEN YAM**  
 Manager Asset Services

Appendix 5

## RIVERBANK SLUMPING PUBLIC REPORT



### Report Information

Date & Time of Report:	
Report taken by:	

### Slumping Information

Location (Name of Property and address OR Name of Reserve and Road Name)	
Approximate Date & Time of Slump	
Name and contact of person reporting it	
Name and contact of person who discovered it	
Description of slump <ul style="list-style-type: none"> <li>• How long in metres?</li> <li>• How wide in metres?</li> <li>• Was it a steep section?</li> <li>• Other details?</li> </ul>	
Damage <ul style="list-style-type: none"> <li>• Was anyone injured?</li> <li>• Was anything damaged?</li> <li>• Did any trees fall onto the river?</li> </ul>	





# Monitoring

- Fragile areas are regularly inspected on a fortnightly basis including photograph recording of deterioration.
- Inspections results are reviewed by Asset Services and the Risk Management Officer.
- Corrective actions are carried forward from previous inspections until closed out.
- Engineering reports have been obtained.

Inspections on one particular area of concern have been suspended due to OHS & W issues.





## Conclusion

The Coorong District Council faced with the need to support a community devastated by drought and low inflows into the River Murray and Lower Lakes. When riverbanks began collapsing in February, Council took immediate action to deal with a situation that was both unique and severe in its nature.

What can you learn from this?

What you can do when it all falls apart!

- Identify the hazards
- Risk assessment
- Establishment of control mechanisms
- Monitor
- Educate employees & elected members
- Keep stakeholders (residents, elected members etc) fully informed.





# Photos





# Photos

