



"Where will our knowledge take you?"

Amity Point Erosion

Review 2011

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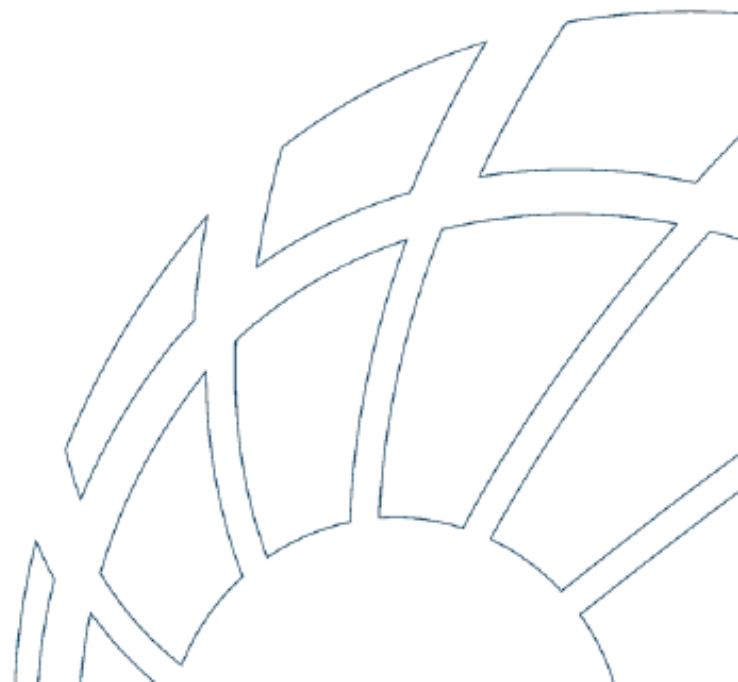


Content of Presentation

Part 1 – Understand Coastal Processes

Part 2 – Consider Management Options and Approval Process

Part 3 – Council's Position



Coastal Process Considerations

Regional Coastal Processes

Historical

Winds and Waves

Tide

Channel depth and sand transport

Options and Approvals

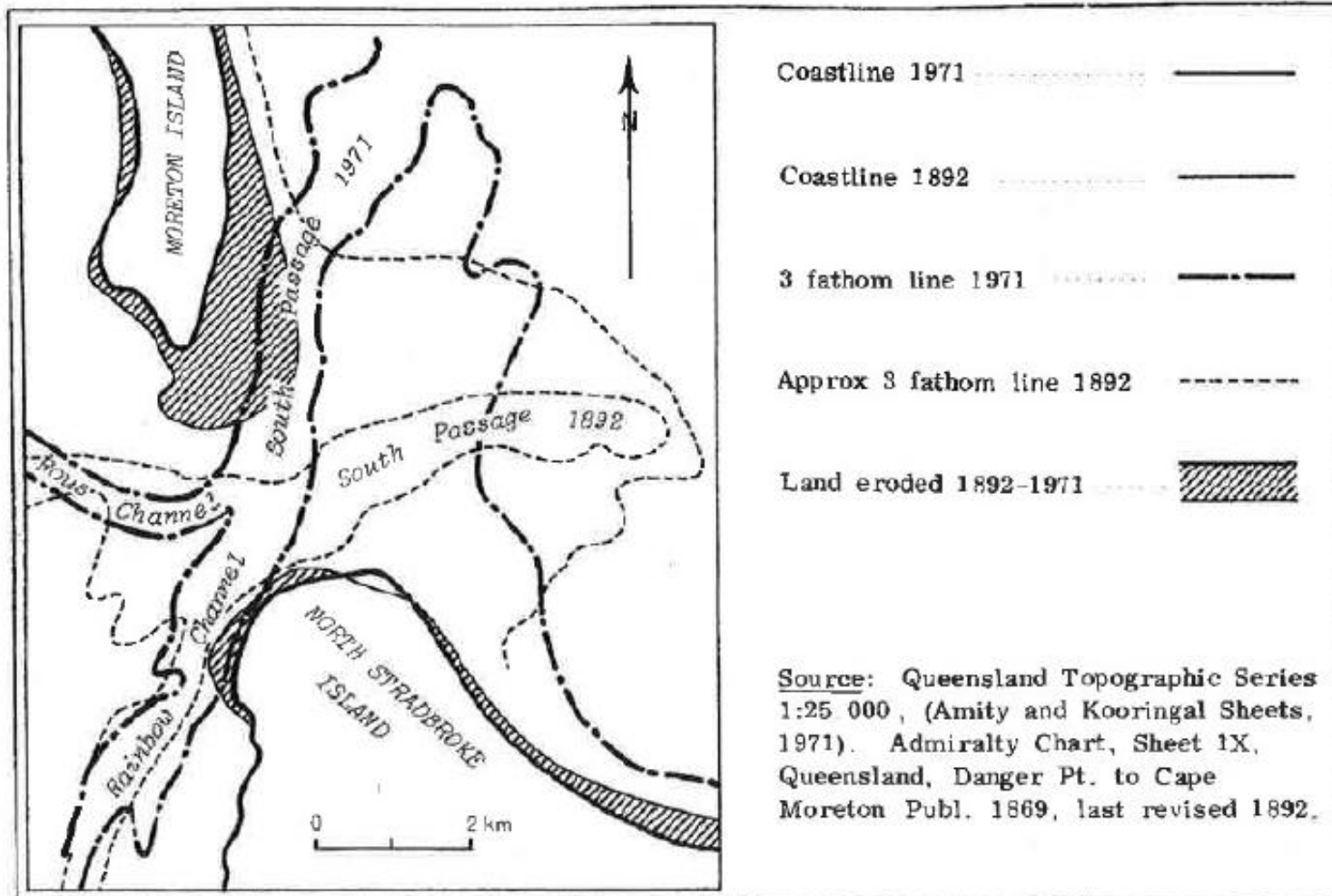
State and Regional Coastal Plans

Local Conservation Zones

LGA Plans



Historical Changes



Historical Changes (cont)

- Channel alignment rotating
- Rainbow Channel becoming more dominant
- Extra pressure on Amity and Koorringal
- Recession limited by rock walls at Amity
- Loss of amenity and translated erosion problems



Recent Conditions

(Nov 2010 NearMap)

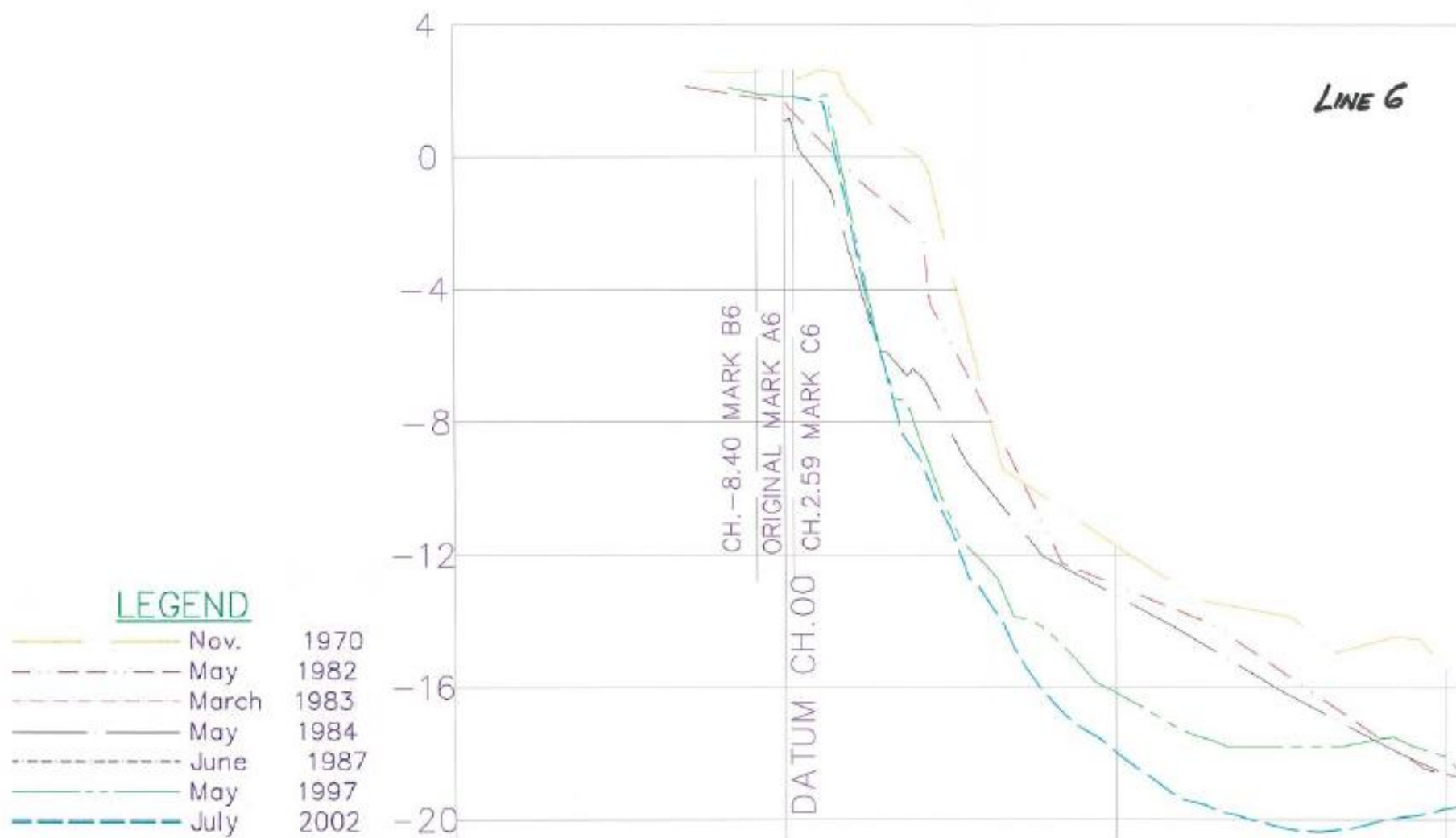


Wind, Waves and Tides

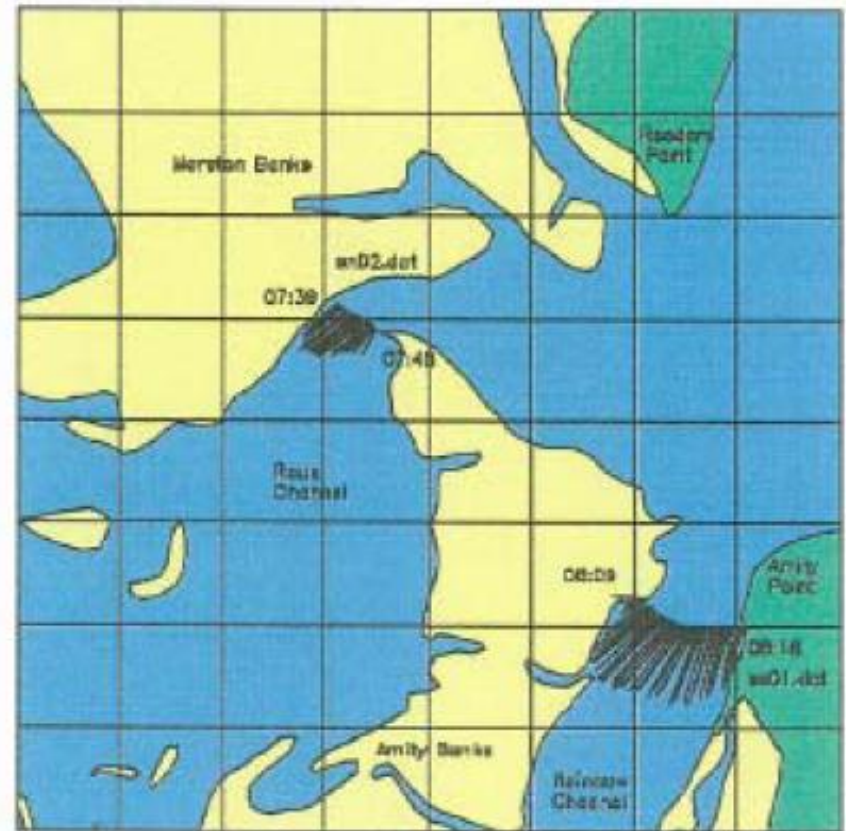
- Exposed to NW to SW winds
- Larger fetch to NW resulting in larger waves from that direction – however less frequent winds for the west
- Waves bigger at high tide as more water over shoals – can undermine walls in events
- Tides will keep channel scoured in front of rock walls
- Translated erosion problems



Local Channel Depths



Currents



- Flood tide evenly distributed across channel
- Ebb tide concentrated against seawalls at Amity exacerbating erosion

January Winds at Brisbane Airport

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9 am						3 pm					
		Mn	Max				Dir	Spd	Time	Temp	RH	Cld	Dir	Spd	MSLP	Temp	RH	Cld	Dir	Spd	MSLP
		°C	°C					km/h	local	°C	%	g th		km/h	hPa	°C	%	g th		km/h	hPa
1	Sa	20.9	27.4	2.6	6.6	0.0	SSE	33	07:17	22.1	96	8	SSE	15	1014.4	23.6	95	8	SSE	11	1012.8
2	Su	22.1	28.4	13.4	2.2	11.2	NE	28	11:22	26.5	80	4	ENE	15	1014.2	27.9	72	3	E	17	1010.8
3	Mo	23.0	29.9	0	6.2	6.9	ESE	31	13:16	27.9	72	5	SSW	13	1009.8	27.0	65	5	ESE	13	1006.5
4	Tu	21.9	28.7	0	5.4	7.8	ESE	37	15:32	26.9	62	6	SSE	11	1008.0	26.9	70	7	ESE	19	1006.3
5	We	21.6	27.9	5.0	5.2	0.0	SW	48	21:12	26.2	68	6	ESE	9	1008.2	26.6	71	6	NE	19	1004.9
6	Th	20.0	24.1	48.6	4.6	0.0	SSW	39	12:17	22.1	95	8	E	13	1005.7	19.3	93	8	SSW	6	1005.3
7	Fr	18.4	26.6	65.8		0.8	ENE	50	07:38	21.3	95	8	ESE	17	1007.6	25.7	69	7	ESE	19	1006.6
8	Sa	21.2	26.6	8.6	2.0	2.1	SSE	37	16:30	25.2	70	7	S	15	1008.1	24.4	84	8	SSE	17	1005.3
9	Su	22.1	27.1	11.6	2.4		ESE	52	15:04	23.9	92	8	SE	19	1006.9	23.9	93	8	ESE	24	1006.0
10	Mo	22.9	26.7	112.4	1.4		ENE	54	19:13	24.0	96	8	ESE	17	1006.7	25.8	88	8	E	20	1005.0
11	Tu	23.9	27.8	19.2	2.0	0.0	E	50	10:12	25.0	90	8	E	20	1008.0	24.2	96	8	E	20	1007.3
12	We	23.5	28.5	27.2	2.4		ENE	39	11:43	27.5	76	4	E	19	1010.7	27.7	77	5	ENE	22	1009.8
13	Th	23.5	28.0	0	7.8	6.9	E	41	11:35	25.9	62	3	SE	17	1013.2	26.7	56	5	SE	19	1010.9
14	Fr	21.3	28.0	0	6.2	11.8	ENE	35	11:32	25.7	62	7	SE	19	1011.6	27.2	56	5	E	17	1009.2
15	Sa	20.3	27.8	0	7.2	9.2	E	31	09:30	26.3	70	7	S	11	1009.2	26.7	63	6	ESE	17	1007.0
16	Su	18.9	28.3	0	6.2		ESE	35	12:35	26.6	62	3	SSE	17	1007.2	27.0	60	5	ESE	20	1005.1
17	Mo	19.6	31.3	0	7.0		NNE	35	16:07	26.9	52	1	SSW	11	1005.5	26.6	58	2	NE	24	1001.2
18	Tu	22.4	33.5	0	7.2	10.1	ESE	37	12:25	31.2	59	1	SW	13	1003.9	29.9	65	3	ENE	22	1003.8
19	We	24.2	30.0	0.6	4.6	10.3	ENE	35	16:06	28.0	76	6	SE	11	1007.6	26.3	74	7	ENE	20	1006.0
20	Th	20.8	28.6	19.6	4.2	8.6	SE	43	15:15	26.0	78	6	SSW	13	1008.8	27.0	70	7	ESE	24	1008.6
21	Fr	20.6	27.6	9.2	6.0	8.0	ESE	43	13:06	23.4	84	7	S	13	1012.1	26.7	62	5	SE	22	1010.9
22	Sa	18.0	28.3	0	6.4	12.5	ESE	44	14:25	25.9	58	3	S	17	1012.8	26.5	55	4	ESE	28	1011.8
23	Su	18.4	27.6	0	9.8	11.6	ESE	41	14:58	25.0	49	3	SSE	17	1010.9	26.8	51	2	ESE	24	1008.7
24	Mo	17.6	27.6	0	6.4	12.5	NNE	26	14:19	25.5	58	1	ESE	11	1010.4	27.1	52	1	NE	19	1007.7
25	Tu	19.6	28.0	0	5.8	12.8	NNE	35	15:52	25.6	67	1	N	15	1011.6	27.0	65	1	NNE	26	1010.2
26	We	21.8	28.7	0	7.4	12.8	NNE	31	13:47	26.6	65	3	NNE	9	1015.4	27.9	61	1	NE	19	1013.9
27	Th	21.2	28.7	0	7.0	12.6	NE	31	14:15	26.7	65	3	SE	13	1015.6	27.8	63	1	NE	19	1012.7
28	Fr	21.4	28.9	0	8.2	9.6	SSE	43	18:13	26.6	68	5	ESE	11	1013.5	28.4	58	3	ESE	22	1013.4
29	Sa	21.6	28.2	2.6	8.0	10.4	ESE	52	10:48	25.8	64	5	S	22	1017.6	27.1	54	2	SE	26	1016.1
30	Su	21.6	29.2	0	8.0	4.1	E	35	09:12	26.4	65	7	ESE	20	1019.7	26.4	68	7	E	17	1017.8
31	Mo	23.5	29.6	0.4	5.8	12.4	ENE	31	14:34	27.3	69	3	ENE	15	1018.4	28.6	60	3	NE	24	1015.5
Statistics for January 2011																					
Mean		21.2	28.3		5.8	7.9				25.8	71	5		14	1010.8	26.6	68	4		19	1008.9
Lowest		17.6	24.1	0	1.4	0.0				21.3	49	1	#	9	1003.9	19.3	51	1	SSW	6	1001.2
Highest		24.2	33.5	112.4	9.8	12.8	ENE	54		31.2	96	8	S	22	1019.7	29.9	96	8	ESE	28	1017.8
Total				346.8	173.6	205.0															

Local Coastal Processes

- Channel encroaching on township
- Wave exposure to NW undermines rock walls
- Channel depth ~20m
- Tidal asymmetry pushes sand to south – ebb tide pushes sand to north – result = no sand and deep channel
- Erosion problems at boat ramps is a consequence of sand starvation due to seawalls

Management Options

- **Do Nothing**

- No change to present

- **Retreat**

- Will allow natural processes to occur
- Some owners will lose property

- **Rock Wall**

- Design difficult due to depth of channel
- High cost

- **Groynes**

- Design even more difficult due to depth of channel and high currents
- Very high cost

- **Sand Nourishment**

- Large quantity required initially
- Careful design required
- Susceptability to events

Approvals

To build a seawall to protect private property, residents will need a Development Approval (DA) and a Marine Park Permit.

DEVELOPMENT APPROVAL

The process for approval of development is managed under the *Sustainable Planning Act 2009* (SPA). To undertake development a person must place an application through the Integrated Development Assessment System (IDAS). The aim of a development application is to provide all the information necessary about a development for the Assessment Manager to make a decision as to whether or not the project can proceed.

The process of development application includes the following steps:

- Preparation
- Lodgement
- Referral
- Assessment

MARINE PARK PERMIT

Amity Point is adjacent to the Conservation Park zone of the Moreton Bay Marine Park. The landward boundary of this park is marked by the highest astronomical tide (HAT). A marine park permit is required for excavation and disposal works undertaken below HAT in this area of the park. An application for a permit is made to the Tourism Services – Permits section of DERM and must include sufficient information about the activity and the location to allow an understanding of the activity and assessment of its impacts. An application is made by way of a written letter to the department.

CHECKLIST OF REQUIRED INFORMATION

Development Approval

Form 1 Application Details

http://smartforms.business.gov.au/eForms03/getForm?formName=Qld_dip_spa_20091218_ver1-Form1_PF.pdf

- ☐ Applicant details
 - ☐ Works details
 - ☐ Owners' consent
 - ☐ Resource entitlement
 - ☐ Form LA00 and Form LA08
- http://www.derm.qld.gov.au/land/state/pdf/form_la00.pdf AND http://www.derm.qld.gov.au/land/state/pdf/form_la08.pdf
- ☐ Supporting information and proof of no impacts on neighbouring access

Form 6 Operational Works

http://smartforms.business.gov.au/eForms03/getForm?formName=Qld_dip_spa_20091218_ver1-Form6_PF.pdf

- ☐ Site plan
- ☐ Addressed planning scheme
- ☐ Earthworks drawings

Form 28 Prescribed Tidal Works

http://smartforms.business.gov.au/eForms03/getForm?formName=Qld_dip_spa_20091218_ver1-Form28_PF.pdf

- ☐ RPEQ plans of works
- ☐ Certificate of title
- ☐ Addressed prescribed tidal works code
- ☐ Letter of support from neighbour/ water allocation area plan

Marine Park Permit

http://www.derm.qld.gov.au/services_resource/s/item_details.php?item_id=203713

- ☐ Application to Tourism Services – DERM