



** Original outlet red circle on 2001 aerial photo of coastline including recently formed road connecting South Golden Beach with Wooyung.*

The Report of the North Byron Shire Flood Mitigation Working Group

 **AREA 1:** Restoration of **the natural flood outlet** currently blocked at Billinudgel Nature Reserve north of Fern Beach (GPS 153.5506, - 28.4856).

AREA 1:

Natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (GPS - 153.5506, -28.4856).



Note: 1987 creek outlet is blocked by gravel road build for light vehicle access.
(See slide 14 ... letter from General Manager to Councillors Dec 2, 1986.)

AREA 1:

Natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (GPS - 153.5506, -28.4856)



1976 North Ocean Shores **outlet closed** and **dune stabilisation** undertaken at the outlet mouth. *(see slide 13 - Deputy Premier's letter to Council 1982)*

AREA 1:

Natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (GPS - 153.5506, -28.4856).

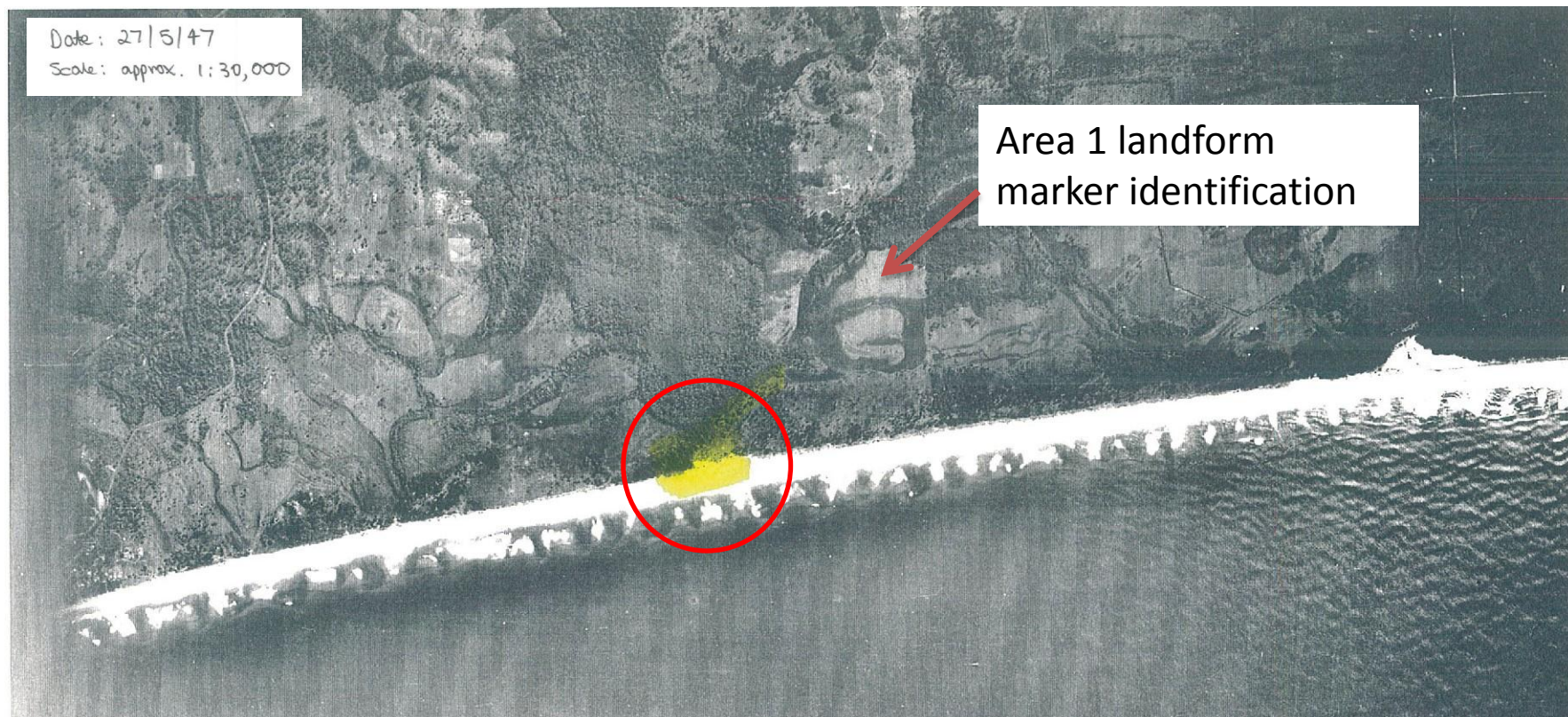


Channel Nine News
Story - Mother's Day
1987

AREA 1:

Natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (GPS - 153.5506, -28.4856).

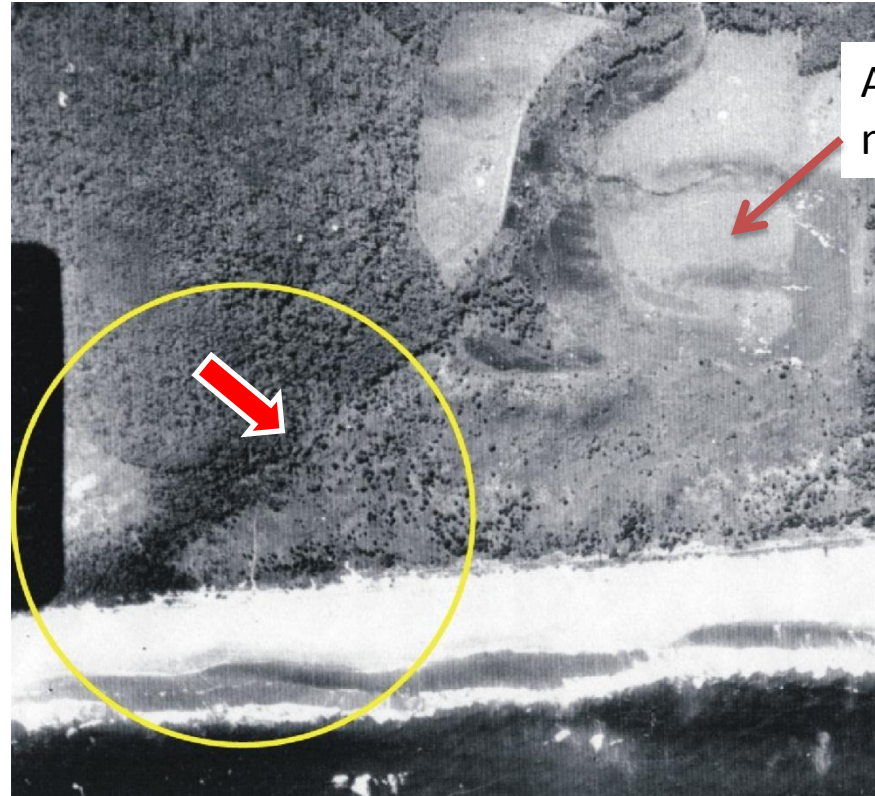


1947 Outlet location.

AREA 1:

Natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



Area 1 landform
marker identification

1944 closer inspection of the North Ocean Shores flood outlet. *Note: 45 degree angle of the natural channel to the overflow outlet feeding from the landform marker (6 shape).*

AREA 1:

Creek outlet in natural state.

Billinudgel Nature Reserve north of Fern
Beach (153.5506, -28.4856)



Creek outlet looking north



Creek outlet looking south

1974 natural creek outlet open and flowing.

AREA 1:

Creek outlet.

Billinudgel Nature Reserve north of Fern
Beach (GPS - 153.5506, -28.4856).

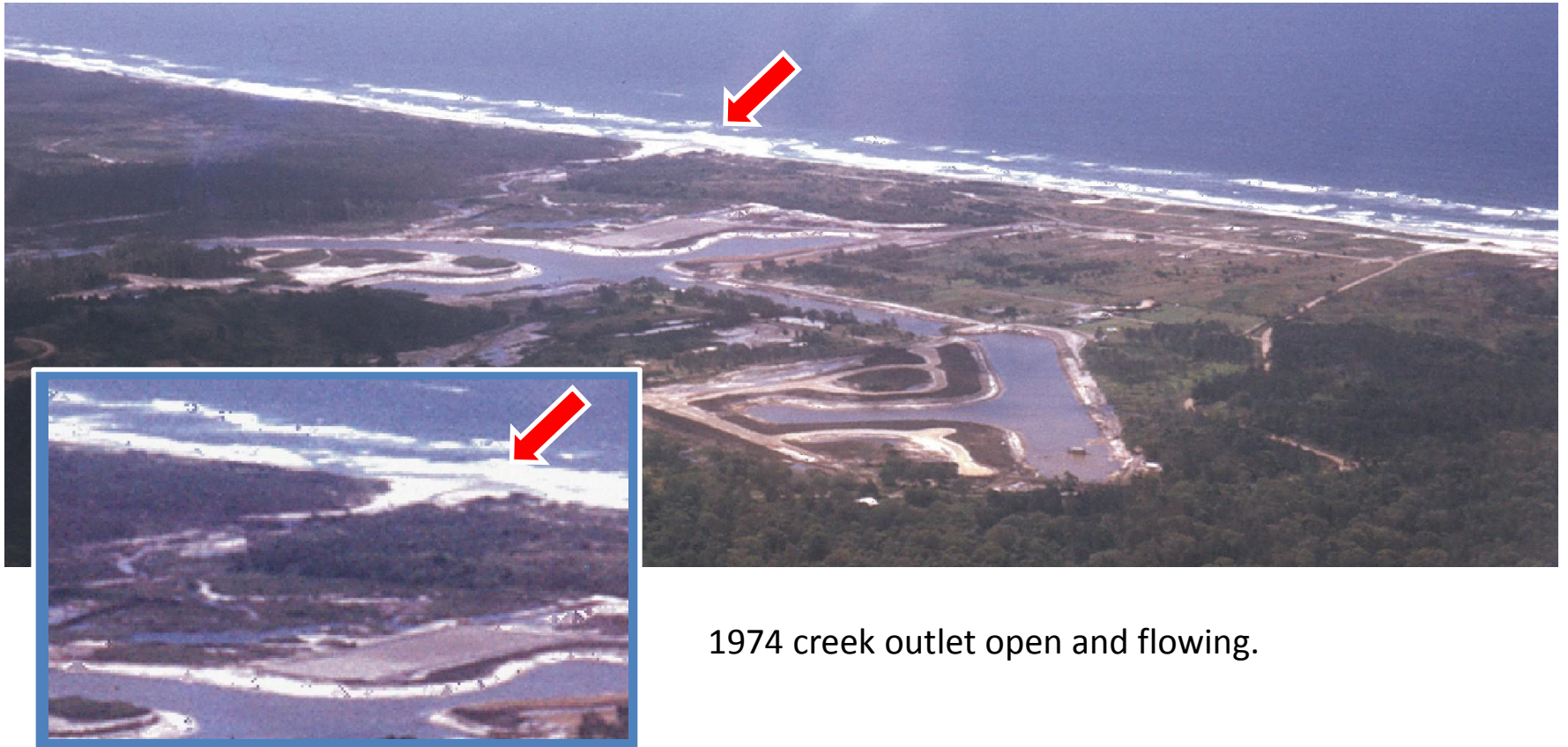


1974 Ocean Shores Stage 2 Development underway ...

AREA 1:

Creek outlet in natural state.

Billinudgel Nature Reserve north of Fern
Beach (GPS - 153.5506, -28.4856).



1974 creek outlet open and flowing.

AREA 1:

Creek outlet in natural state.

Billinudgel Nature Reserve north of Fern Beach (GPS - 153.5506, -28.4856).

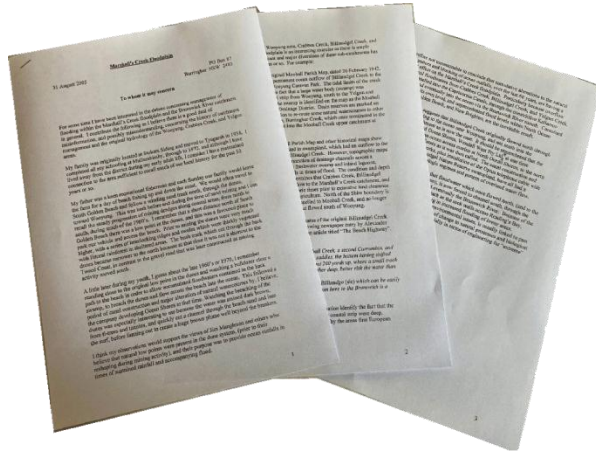


Opinion excerpt 31st August 2005: The Marshalls Creek Floodplain Ocean Outfalls Ian Fox - An account of the area in the 1960's Southern Cross University Environmental Resource Management

'it is therefore not unreasonable to conclude that cumulative alterations to the natural drainage and blocking of ocean outfalls over the last 60 years are having a significant effect on the Marshalls Creek Floodplain. Particularly overflow and additional floodwaters from Crabbes Creek, Billinudgel Creek and Yelgun Creek are now channeled into the Capricornia Canal, through the constrictive Kallaroo Court bund and eventually into the ocean at Brunswick Heads mouth. Contained water will find it's own level and unprecedented flood levels within North Ocean Shores, South Golden Beach and New Brighton are the inevitable result.'

Full letter...

https://brunswickvalley.com.au/flood-history/flood_story51.pdf



1974 creek outlet open and flowing.

AREA 1:

Position of former creek outlet in 2025.

Billinudgel Nature Reserve north of Fern Beach (GPS - 153.5506, -28.4856).

David Warth to provide images & video.



Photos and video showing the location of the outlet blocked by dunes and road.

Communication between State Government and Byron Shire Council:



Shire Engineers Report. 22/6/76
Attachment

2. OCEAN SHORES - DIVISION 17 (03.6)

Pursuant to Minute 423 of Council's May meeting, I have discussed the closure of the temporary flood overflow with Princess Properties Pty. Ltd., The company has agreed to close the flood opening and to restore the ground to its original condition in accordance with its agreement with the Department of Lands. Associated with this work, the Company will arrange to clear the waterway from the existing New Brighton Road bridge upstream to the bend in Yelgun Swamp. An exchange of correspondence will confirm this arrangement.

I also discussed the possible effect of flooding in the New Brighton/South Golden Beach area as a result of closing this temporary flood by-pass. Mr. Corben expressed the opinion that the Company would not be liable for any claims in the future that works that have been carried out by the Company have resulted in an increase in flood height in these areas. I agree with Mr. Corben in this as the area of the flood plain which the Company has developed is only a relatively small proportion of the total flood-plain area. If the Company's works did have an effect on the height of any particular flood, this would only be marginal, say in the order of 1 to 3 inches, and virtually impossible to establish with any precision.

For Information.

2. OCEAN SHORES - DIVISION 17 (03.6)

539 Cr. Donoghue, Resolved that the information be received.
Cr. Farrell.

RECEIVED
10 JUL 1976
OFFICE OF THE
OMBUDSMAN

BYRON SHIRE COUNCIL. 516
ORDINARY MEETING. 27TH JULY, 1976.
SHIRE ENGINEERS REPORT CONT.

7. OCEAN SHORES BONDING (03.6).

Further to Council's request to restore the old mining track in the vicinity of the temporary flood outlet north of New Brighton, a letter has been received from the Company indicating the method of construction proposed. Sand fill will be placed in the opening in the dune, this will then be mulched, vegetation planted and fenced and the road gravelled. The works will be joined to the existing land forms in easy curves and with minimum disturbance of existing vegetation.

I have examined the proposal and inspected the site and consider that the works, as proposed, should adequately meet Council's needs.

As discussed at the June meeting, closure of this temporary outfall could have an effect on the flood levels in New Brighton, although, in my opinion, the effect would be very small and impossible to determine accurately. There is also the distinct possibility that the temporary outfall would be blocked when the flood occurred anyway, and, in that case, would have no effect whatsoever.

The company seeks Council's endorsement of its proposal and, thereby, effectively transferring the responsibility of whatever increased flooding may result from the works, from the Company to Council.

Recommendation:- That the Company's proposal to block the temporary outfall from the Yelgun catchment be approved by Council.

7. OCEAN SHORES BONDING (03.6).

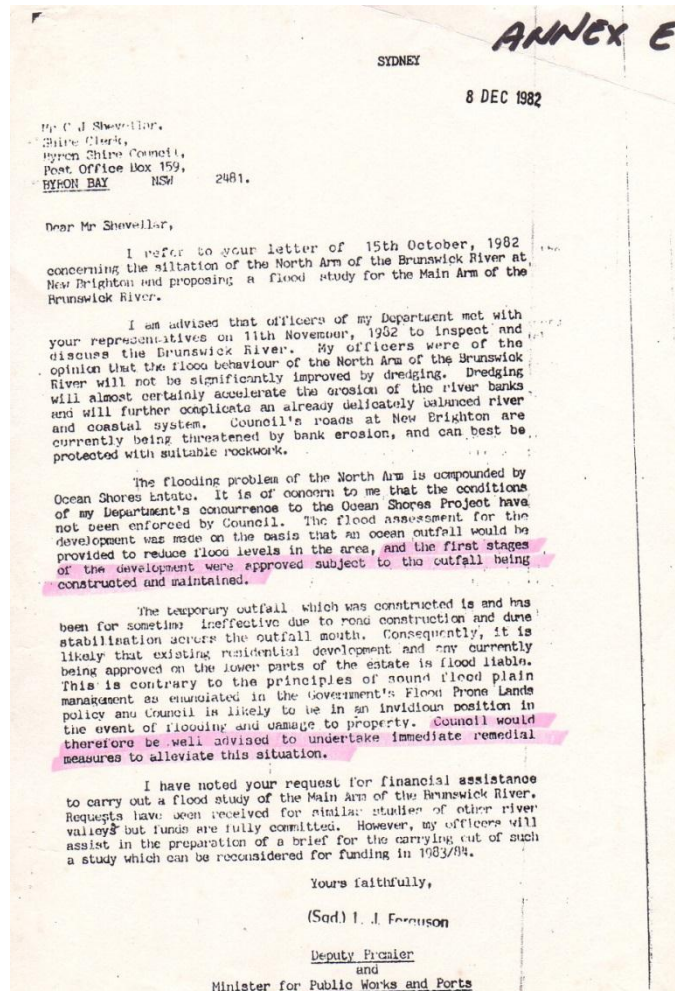
631 Cr. Knuckey, Resolved that the recommendation be adopted.
Cr. Donoghue.

Document 1:

1976 BSC Engineer's Report and Minutes of Council meeting.

COUNCIL RECORDS PROVIDED BY OMBUDSMAN SHOWING COUNCIL
RESOLUTION TO ACCEPT LIABILITY FOR FLOODING CAUSED BY
COMPANY COMPLYING WITH REQUEST TO CLOSE OUTLET

Communication between State Government and Byron Shire Council:



Document 2:

1982 L. J. Ferguson Deputy Premier
Minister for Public Works and Ports
letter to Council.

Regarding the temporary outfall
being ineffective due to road
construction and dune stabilisation
across the outfall mouth ...

*'Council would therefore be well
advised to undertake immediate
remedial measures to alleviate this
situation.'*

Communication between State Government and Byron Shire Council:



BYRON SHIRE COUNCIL

STRICTLY CONFIDENTIAL
COUNCILLORS ONLY

The Shire President
and Councillors,

Ocean Shores Estate Report

Attached is a copy of the report prepared by Mr. F. Cranston, Civil Engineer, employed by the Council from 13th October, to 28th November, 1986.

The summary should be read in conjunction with the decision of Council on 25th November, to convene a meeting with the Developer and other representatives.

The Developer contacted me through a representative and later by solicitor seeking an opportunity to respond to the report before it was issued to the public. It is felt that the report should not be withheld, however advice is firstly being sought from Sly and Russell regarding any possible causes of action against the Council and/or its employees in regard to the report.

Further advice therefore will be forwarded to you as soon as a report is received from Sly and Russell.

It is necessary under the circumstances that the contents of the report be not released or discussed.

R.L. Jackson
R.L. JACKSON,
GENERAL MANAGER.

- 2 DEC 1986

(4) Flood Outlet

The flood level, which appears to have the concurrence of the Public Works Department is 3.4 metres on A.M.D. for a recurrence interval of 1 in 100 years. This flood level is subject to a flood relief structure in the nature of a flood outlet to be constructed through the frontal beach dune with outfall to the ocean. A temporary device by cutting a wide slot through the dune was undertaken in conjunction with the land development works mid 1970's, but for the reasons that vehicular access along the beach road was denied to ordinary vehicles by the destruction of the gravel road and also natural forces were in the process of re-establishing the beach dune, the dune and beach road were re-established. By approving this action Council has accepted the liability for subsequent flooding, not only of the Ocean Shores lots, but also those lots in the adjoining South Golden Beach. The concern of the Public Works Department regarding this matter has been expressed on a number of occasions. Associated with the construction of the permanent outfall structure is the requirement of the Lands Department that a surety be lodged for any necessary restorations. It is noted that Council has accepted liability for the maintenance of this structure.

Document 3:

1982 Report to Councillors about the construction of a permanent flood outlet.

'By approving this action Council has accepted the liability for subsequent flooding, not only of the Ocean Shores lots, but also those lots in adjoining South Golden Beach.'

'It is noted that Council has accepted liability for maintenance of this structure.'

Communication between State Government and Byron Shire Council:



GMCD/JT/03
YOUR REFERENCE

Further Contact: Mr. G.A. McDonald
BYRON SHIRE COUNCIL

The Managing Director,
Ocean Shores Development Corporation,
P.O. Box 19,
BRUNSWICK HEADS. N.S.W. 2483

30 OCT 1985

Attention: Mr. M. Cunningham

Dear Sir,

Re: Ocean Shores Bonding - Flood Overflow.

I refer to discussions between yourself and Council's Engineer on Monday the 28th October, 1985, where you requested justification for Council requiring your company to bond, at this stage, the construction of the flood overflow, from the estate into the ocean.

The position is, as explained by Mr. McDonald, that the development currently existing was originally approved by Council and the Public Works Department on the basis of a floodway design that incorporated a flood overflow as an integral component in controlling the flood levels. Subsequent development has proceeded at levels based on the assumption that the flood overflow would be installed.

It is estimated by the Public Works Department that the 1:100 year flood level at the northern divisions would be half a metre higher than that previously calculated, should the overflow not be installed as required. This has, of course, implications for the development in the northern divisions in particular, which were partially developed in the mid 70's (on the basis of the overflow being installed) and subsequently completed shortly after your organisation purchased the development company.

A quick perusal of Council's files has provided the following in support of Council's viewpoint in this matter (copies attached):-

- Public Works Department letter of the 10th May, 1973 to Cardno & Davies setting out terms of approval to the hydraulic master plan, and development of the estate, which entails construction of a temporary flood by-pass and the bonding for the construction of a permanent one.
- Council letter to developer of the 18th March, 1974, setting out conditions of approval for the Development Area Plan for the northern divisions, which includes a requirement that the "design of waterways be approved by the Public Works Department and Council".

..../2

Ocean Shores Development Corporation - 2 - 30 OCT 1985

- Public Works Department letter of the 6th August, 1975, to Cardno & Davies reconfirming the Department's original conditions of approval and detailing the matters (including the flood overflow) still outstanding at that point in time.
- Minister for Public Works' letter to Council of the 8th December, 1982 expressing concern that his Department's original condition of concurrence for development on the estate - i.e. the flood overflow - had not been enforced by Council.
- Public Works Department letter to Council of the 22nd December, 1982, reiterating that Department's requirement that a flood overflow be constructed and that, without it, the developed land is 'flood prone'.
- Department of Environment and Planning letter to Council of the 9th May, 1984, advising that the Public Works Department's original requirements should be carried out "in fulfilment of the previous conditions of consent".
- Minutes of Byron Shire Flood Plain Management Committee Meeting of the 7th August, 1985, (Item 2) where Mr. Parr, District Engineer of the Public Works Department, advised the meeting that "the flood overflow must proceed".

Whilst both Council and the Public Works Department are willing to consider any proposals that your company may have, as an alternative to the construction of the flood overflow (these proposals would have to include consideration of effect on existing development previously approved on the basis of the overflow proceeding), it is indisputable, from the attached correspondence, that the company is currently obligated to the bonding of the overflow. It is also pointed out that the overflow is presently included (at \$130,000) within the current bond of \$295,000.

Yours faithfully,
C.J. Shevellar
C.J. SHEVELLAR
SHIRE CLERK.
PER: [Signature]
ENCL.

Document 4:
1985 Letter to OS Developers from
Shire Clerk.

Communication between State Government and Byron Shire Council:



New South Wales Government
Department of Public Works
185 Molesworth Street, Lismore NSW
P.O. Box 22, Lismore 2480
Telex: 66946
Our reference:
Your reference:
Telephone: (086) 233301 211688
Comments: Mr. I. Taylor
19 DEC 1984

The Director,
Cardno and Davies Australia Pty. Ltd.,
P.O. Box 388,
TOOMONG, QUEENSLAND, 4066

Dear Sir,

Ocean Shores Development Hydrology
and Hydraulics

The Department has completed its review of the above report and the following overall comments are offered:-

- (1) **Storm Tides:** The incidence of elevated ocean levels resulting from cyclones is considerably higher than suggested in the report. Data suggests the incidence is around 50% cyclones and 50% east coast lows. In addition, the hydrograph presented at Figure IV/20 is based upon prototype data, (i.e. 1954 cyclone at Tweed Heads) and as such was considered more appropriate for use than the other hydrographs represented at Figures IV/12 and IV/13 which are hypothetical in nature.
- (2) **Hydrology:** The Department concurs with the report, however, following Professor Filgrin's report, the Hittin Regional Method cannot be regarded as an "equally legitimate" hydrological method.
- (3) **Hydraulics:** The findings of this portion of the report are generally concurred with. It is noted that a 0.3 m difference occurs between flood levels at the junction of the North Arm, Main Arm confluence in this study and the Brunswick Flood Study. The difference is considered reasonable given the respective order of accuracy of the two studies.
- (4) **Siltation and Staging:** The Department has previously concurred with these sections.
- (5) **Effects on External Areas:** The report did not address what measures the developer intends to undertake to mitigate against the effects of increasing velocities through South Golden Beach estate (i.e. unformed canal).
- (6) **Effects of Siltation and Bars Buildup Upon the Performance of the Ocean Outlet:** The report has indicated that siltation of the channel inside the ocean outlet can increase flood levels by 0.35 to 0.42 m and that a buildup of the bars in front of the outlet can raise flood levels by up to 1.5 m. Given the order of magnitude of these effects it is apparent that maintenance of the outlet area is critical to the success of this project and should be resolved as a matter of priority.

Given the above the Department concurs with the findings of this report subject to the resolution of points (5) and (6) above.

Yours faithfully,

K. F. Parr,
District Engineer

LETTER FROM PWD DATED 19TH DECEMBER 1984. WARNING OF FLOOD INCREASE BEHIND BLOCKED OUTLET CAUSED BY ANY BUILD UP OF SAND IN FRONT OF OUTLET.

Document 5:

1984 Public Works letter warning of increased flood levels behind blocked outlet caused by a build up of sand.

Flood Strategy presented to Byron Shire Council ...



Report 1:

Proposal Brief presented to BSC: To identify 3 locations along the coastline from Wooyung to the Brunswick River mouth to position flood pumps to remove excess flood water off the floodplain into the ocean in order to lower the flood levels on the floodplain at critical times during a major flood event.

The location for the pumps were selected on the basis that they are:

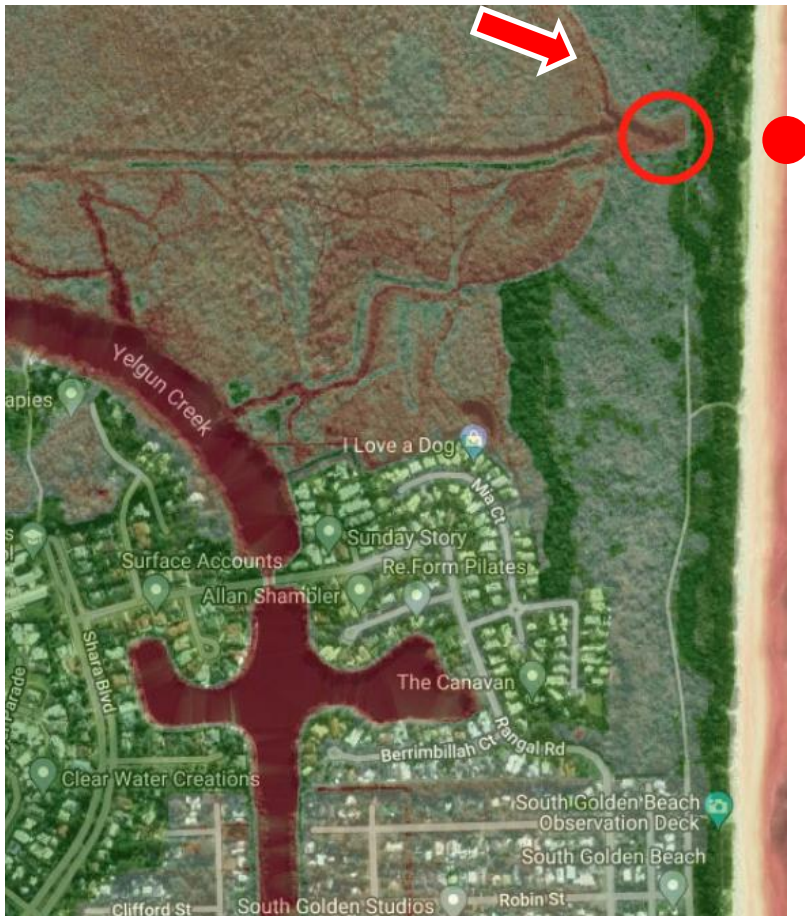
1. **Low elevation (around 1.2m/ 1.3 AHD)**, hence will be an area that will be inundated early in a flood event.
2. **Still have semi-intact remnant drainage channels** that will carry floodwater from overflow from Marshalls Creek or Billinudgel Nature Reserve.
3. Are located on Crown Land.

The 3 locations identified are:

1. North of sports field at New Brighton (153.5491, -28.5037)
2. South of levee at SGB (154.5499, -28.4984)
3. **Billinudgel Nature Reserve north of Fern Beach (GPS - 153.5506, -28.4856).**

Note: This is referring to Area 1.

Communication between State Governments and Byron Shire Council:



Location 3:

Note: This is referring to **Area 1**.
Billinudgel Nature Reserve
north of Fern Beach
(GPS - 153.5506, -28.4856).



Committee members;

Website : https://brunswickvalley.com.au/flood-history/north_byron_shire.htm

Working Group

Cr David Warth

David Brealey

Mark Russell

Jan Mangleson OAM (OSCA President)

Denise Stammers (OSCA Treasurer)

Margaret Kelly

Jill Spring

Heather Rowland

Diane Boyd

Graeme Boyd

Michael James