



WATER SUPPLY - GENERAL
LEP REVIEW - PVILLE LOCALITY PLAN
LEP REVIEW - LEP/2006
LEP REVIEW - EMALINDRA UNIONS
SEWERAGE MANG - GEN

12th November 2009

The General Manager
Tweed Shire Council
PO Box 816
MURWILLUMBAH NSW 2484

TWEED SHIRE COUNCIL	
FILE No:...	GTI/LEP/2006 P14.
DOC. No:.....	
RECD: 16 NOV 2009	
ASSIGNED TO: LONNELL ✓	
HARD COPY <input checked="" type="checkbox"/>	IMAGE <input type="checkbox"/>

Attention: Mr. Michael Rayner

RE: POTTSVILLE RELEASE AREAS – PROVISION OF SEWERAGE INFRASTRUCTURE

Dear Sir,

We refer to the matter above and the Councilor’s workshop held on the 27th October 2009. In this regard please find attached letters of confirmation with respect to the provision of funding to commence the investigation process as discussed.

Should Council have any queries in respect of this correspondence, please do not hesitate to contact the undersigned at any time.

Kind regards

Adam Smith
Director
PLANIT CONSULTING

CUSTOMER: PLANIT

HERITAGE PACIFIC

IAN TAGGET EARTH MOVING

PVILLE DEVELOPMENT CORP.

NEW SOUTH WALES

Kingscliff
PO Box 1623, Kingscliff NSW 2487
Level 2, Kingscliff Central, 11-13 Pearl Street, Kingscliff
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12th November 2009

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Tweed Shire Council
PO Box 816
MURWILLUMBAH NSW 2484

RE: POTTSVILLE RELEASE AREAS – PROVISION OF SEWERAGE INFRASTRUCTURE

Dear Sir,

We refer to the matter above and the Councilor's workshop held on the 27th October 2009. In this regard we wish to formally request, on behalf of Heritage Pacific, Council's assistance in commencing the strategic investigations and considerations relative to the future provision of sewerage in Pottsville.

In this regard we advise that we act on behalf of the land owners identified to have controlling stakes in the predominance of lands identified within the Tweed Employment Generating Lands Strategy 2009, the Tweed Urban Land Release Strategy 2009 and the DRAFT Pottsville Locality Plan 2009.

As suggested at the recent Councillor workshops, we are seeking the following:-

1. Council's assistance in undertaking a Strategic Demands and Site Selection Investigation with respect to the future Sewerage needs of Pottsville;
2. In return for a commitment (by the landowners) to funding these investigations, we are seeking a commitment from Council to be a party to a Memorandum of Understanding that sets out the terms and timing of these investigations; and
3. We are seeking to be a party to the brief prepared for any such investigations and for any tenders in this regard to be made available for scrutiny.

As you will appreciate the timing of these investigations are crucial to being able to ensure the orderly development of the land consistent with Council's recently adopted strategies.

We understand that this request will be reported to the council. In this regard we respectfully request that this request be tabled to the council at the November meeting. In the interim, should council wish to discuss this matter further, we would be happy to meet at any time.

NEW SOUTH WALES

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ABN 20 099 261 711

Kind regards

A handwritten signature in blue ink, consisting of a large, stylized loop followed by a horizontal line extending to the right.

Adam Smith
Director
PLANIT CONSULTING
on behalf of Heritage Pacific P/L



Ian Tagget Earthmoving

ABN 51 816 341 906
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10th November 2009

The General Manager
Tweed Shire Council
PO Box 816
MURWILLUMBAH NSW 2484

RE: POTTSVILLE RELEASE AREAS – PROVISION OF SEWERAGE INFRASTRUCTURE

Dear Sir,

We refer to the matter above and the councilor's workshop held on the 27th October 2009. In this regard we wish to formally request council's assistance in commencing the strategic investigations and considerations relative to the future provision of sewage in Pottsville.

In this regard we advise that we are one of the owners of land identified in the lands identified within Tweed Employment Generating Lands Strategy 2009, the Tweed Urban Land Release strategy 2009 and the DRAFT Pottsville Locality Plan 2009

As suggested at the recent Councilor workshops, we are seeking the following:-

1. Council's assistance in undertaking a Strategic Demands and Site Selection Investigation with respect to the future Sewage needs of Pottsville.
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Yours Faithfully

RA Tagget

IN TEST

POTTSVILLE DEVELOPMENT CORPORATION PTY LTD
(FORMERLY POTTSVILLE QUARRIES PTY LTD)
ACN 065 290 763
ABN 26 065 290 763

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10th November 2009

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Tweed Shire Council
PO Box 816
MURWILLUMBAH NSW 2484

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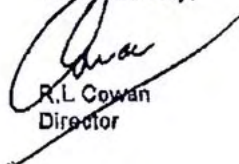
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Yours faithfully,


R.L. Cowan
Director

Coastal WWTP's and Catchment Capacity



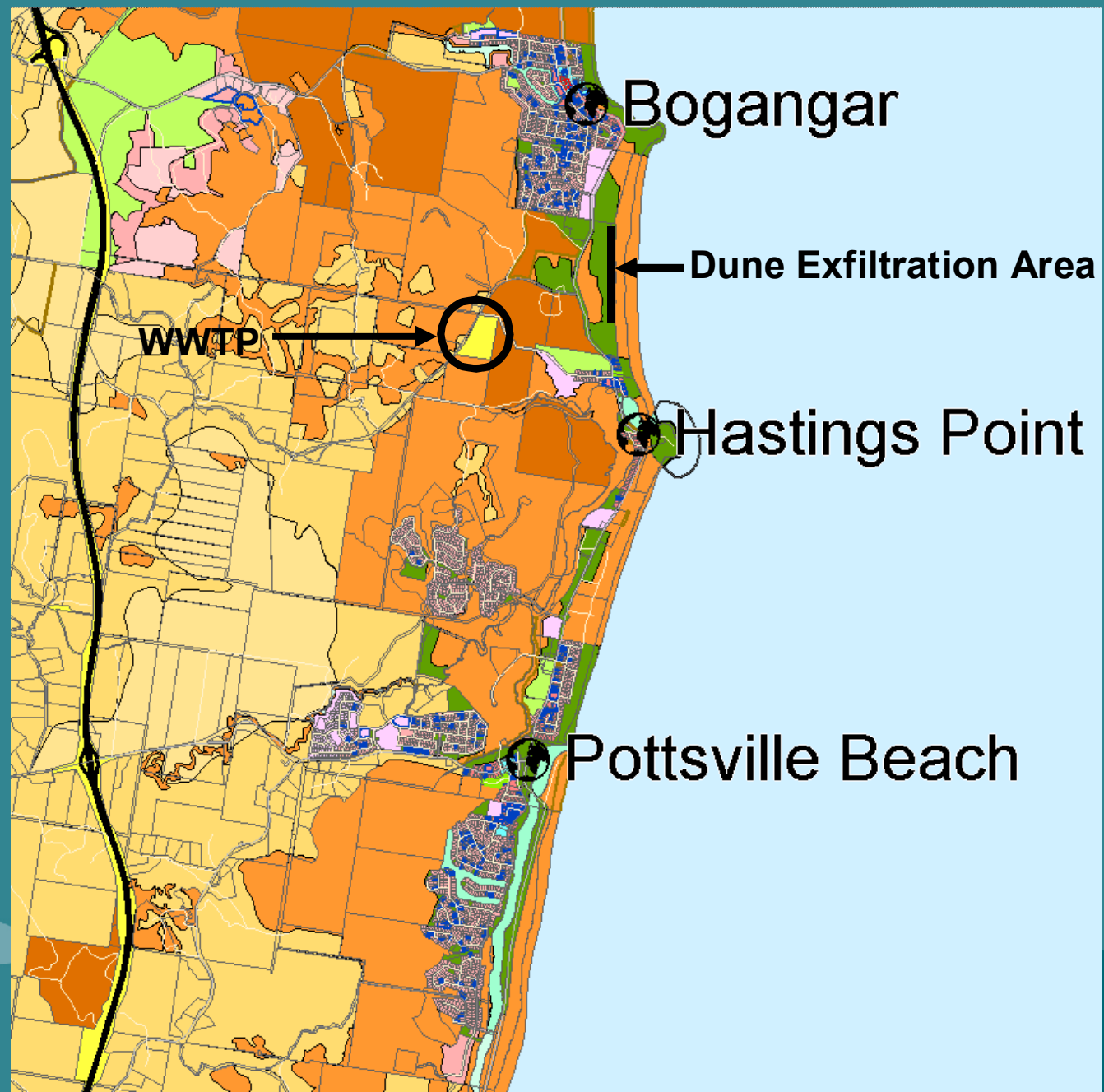
Coastal Wastewater Treatment Plants and Catchment Capacity

Current Available Capacity at Coastal WWTPs

WWTP	Current Capacity	Average Loading	Estimated Peak Loading = Av x 1.15	Available Capacity
	ep	ep	ep	ep
Banora Point	62500	54500	62675	-175
Kingscliff	25000	12000	13800	11200
Hastings Point	16000	10500	12075	3925
Totals	103500	77000	88550	14950

1. Approved Upgrades
2. Banora Point Upgrade with provide 12,500 ep
3. Tweed Heads Current Approval for 10,000 ep

Hastings Catchment



Hastings Point Projected Population April 2007

Locality	2001	2011	2021	2031	2041
Cabarita	2621	3301	3981	4662	5342
Hastings Pt	722	877	1031	1185	1339
Pottsville	2137	2664	3248	3959	3959
Pottsville Waters	1271	1350	1400	1500	1500
Black Rocks	0	1000	1280	1280	1280
Tanglewood	98	100	1200	1200	1200
Koala Beach	98	1600	1600	1600	1600
Seabreeze	0	1800	2000	2000	2000
Totals	6946	12692	15740	17386	18220

Hastings Point Projected Loading kL/day @ 240 L/p/day

Totals	1667	3046	3778	4173	4373
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Plant loading is approx 10500 ep equating to 2500 kL/day

Plant with 16000 ep Capacity equates to 3840 kL/day

Plant with 18000 ep Capacity equates to (some works required) 4320 kL/day

Note: figures do not include allowances for an increase in the proportion of commercial activity and holiday loadings

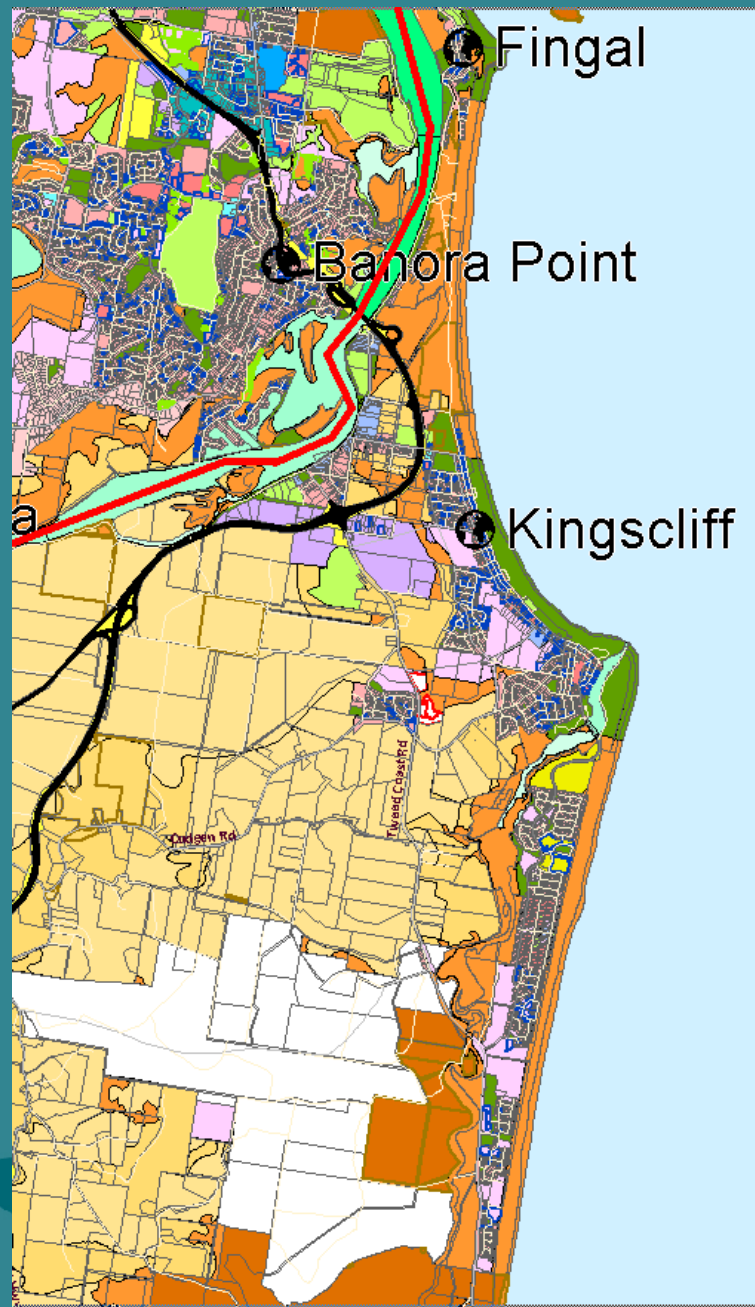
Hastings Point WWTP – What's still required

- 1. Rectify Filtration problems to achieve 18000ep capacity of Dune exfiltration system**
 - likely replacement of disc filter with sand filtration at WWTP
- 2. Additional capital works at WWTP to ensure process robustness and provide some redundancy at 18000ep loading. Works include:**
 - 2 additional sludge lagoons
 - Possible additional catch balance tank and concrete lining of existing catch balance lagoon
 - Possibly an additional bio-reactor
 - Possible increase in storm lagoon capacity

Notes:

- 1. The concept for the plant augmentation from the original 8000ep to the 18000ep was a staged approach to squeeze as much capacity as possible for the existing tankage.**
 - The concept was confident of doubling the capacity of the bio-reactors to 16000 ep.
 - However to achieve 18000ep was to be determined by monitoring actual performance. This approach minimised upfront expenditure.
 - 2 additional sludge lagoons were to be constructed to match increasing loading.
 - Additional flow balancing if required dependent on gravity sewer infiltration and inflow performance.

Kingscliff Catchment



Kingscliff Projected Population April 2007

Locality	2001	2011	2021	2031	2041
Fingal	626	784	960	1176	1176
Chinderah	1794	2243	2754	2754	2754
Kingscliff	5049	5270	5270	5270	5322
West Kingscliff	0	0	1400	2800	2800
Cudgen Village	579	656	733	811	888
Rest of Rural A	907	1122	1122	1122	1122
Kings Forest	0	0	5000	5000	11500
Casuarina	0	4500	5000	5000	5000
Lot 490 & Sea Side City	0	0	2500	2500	2500
Salt	0	2000	2500	2500	2500
Totals	8954	16575	27239	28933	35562

Kingscliff Projected Loading kL/day @ 240 L/p/day

Totals	2149	3978	6537	6944	8535
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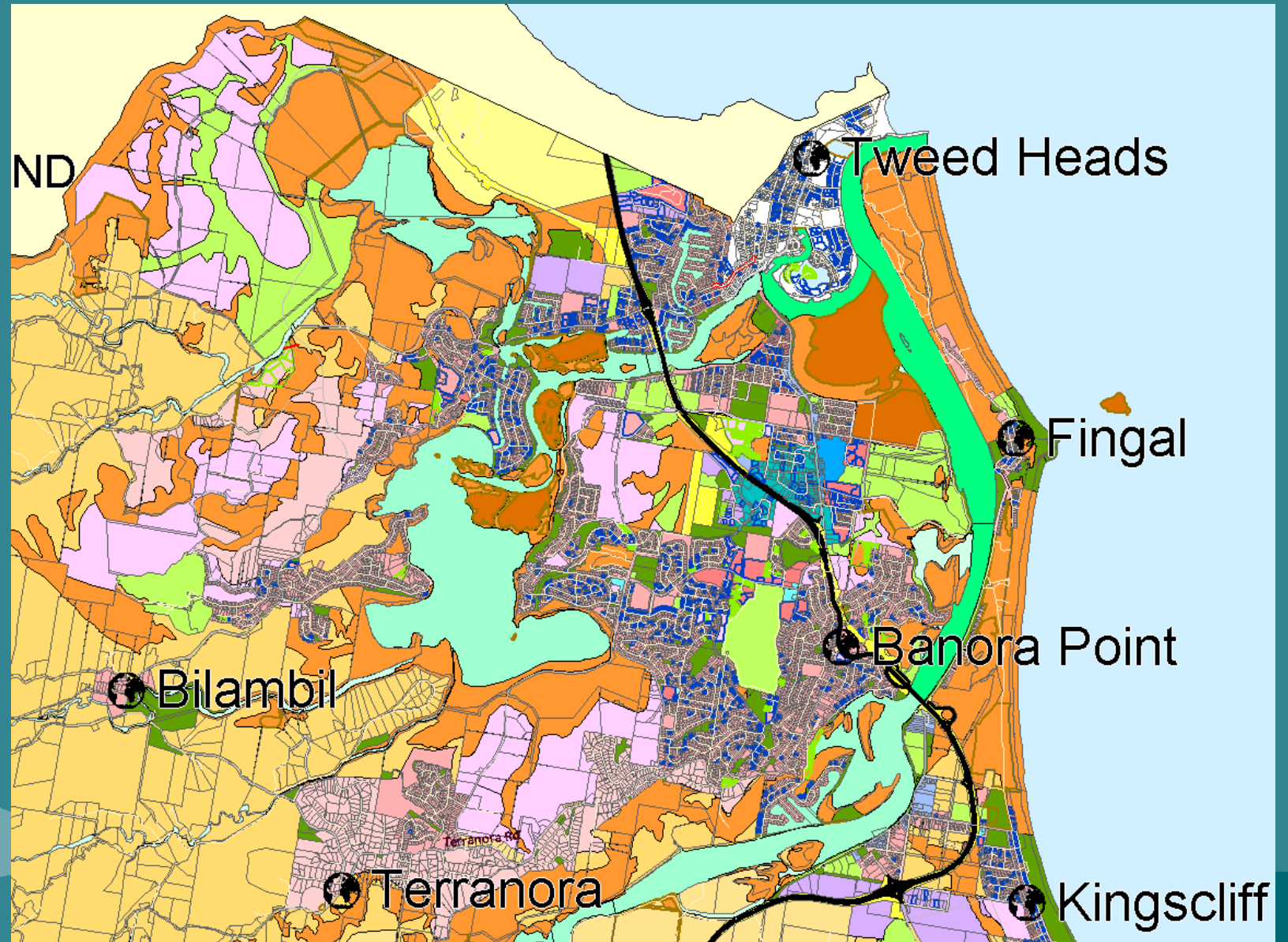
Plant with 25,000 ep Capacity equates to 6000 kL/day

Note: figures do not include allowances for an increase in the proportion of commercial activity and holiday loadings

Kingscliff WWTP – What's still required

- 1. Augmentation once load reaches 20000ep (approx 2016)**
- 2. Size of augmentation to be determined but up to 25000ep has been catered for.**
- 3. Next augmentation will require the full range of government approvals (existing river discharge is not guaranteed)**
- 4. Further reuse will be a condition of any likely approvals**
- 5. West Kingscliff development has been identified as feasible reuse opportunity which will require an advanced waste water treatment plant module to supply recycled water to this development area.**

Banora Catchment



Coastal WWTP's and Catchment Capacity

Banora Point Projected Population April 2007

Locality	2001	2011	2021	2031	2041
Tweed Heads	6853	7800	8000	8000	8000
Tweed Heads Infill	0	2000	4000	6000	10000
Tweed Heads West	7673	8400	8664	8719	8719
Tweed Heads South & Banora Pt	16771	19098	21424	23751	26077
Bilambil Heights	2395	2498	2601	2705	2808
Bilambil & Piggabeen	907	1110	1314	1517	1720
Cobaki	0	1000	6000	10000	11040
Highlands Estate	29	625	625	625	625
McAllisters	0	0	0	2110	2110
Adjacent to Terranora Resort	244	250	1500	3010	3010
Terranora Resort	0	0	1600	3564	3564
Terranora Rural	2209	2836	3463	4090	4717
Area E	0	0	2000	2000	2000
Totals	37083	45617	61191	76090	84390

Banora Point Projected Loading kL/day @ 240 L/p/day

Totals	8900	10948	14686	18262	20254
Plant with 75,000 ep Capacity equates to				18000	kL/day
Plant with 10,000 ep Capacity equates to				2400	kL/day
Total				20400	kL/day

Note: figures do not include allowances for an increase in the proportion of commercial activity and holiday loadings

Coastal WWTP's and Catchment Capacity

Banora WWTP – What's still required

1. Current augmentation from 62500 to 75000ep with construction to start 3rd quarter 2010
2. Tweed Heads WWTP Current Approval for 10,000ep (approx 2015)
3. Future augmentation of either Banora point or Tweed Heads WWTP above 85000ep (approx 2020), noting these catchments have a significant commercial loading above the residential population.
4. This future augmentation will require the full range of government approvals
5. Likely that further reuse will be a condition of any likely approvals
6. Possibly an advanced waste water treatment plant module will be required to supply recycled water to maximise reuse opportunities.

Constraints to Augmentation at Hastings Point

1. Hastings Point Dune Exfiltration System

- Capacity unlikely to be greater than 18,000 ep once filtration issues rectified
- Has already been doubled in size, further approvals unlikely.

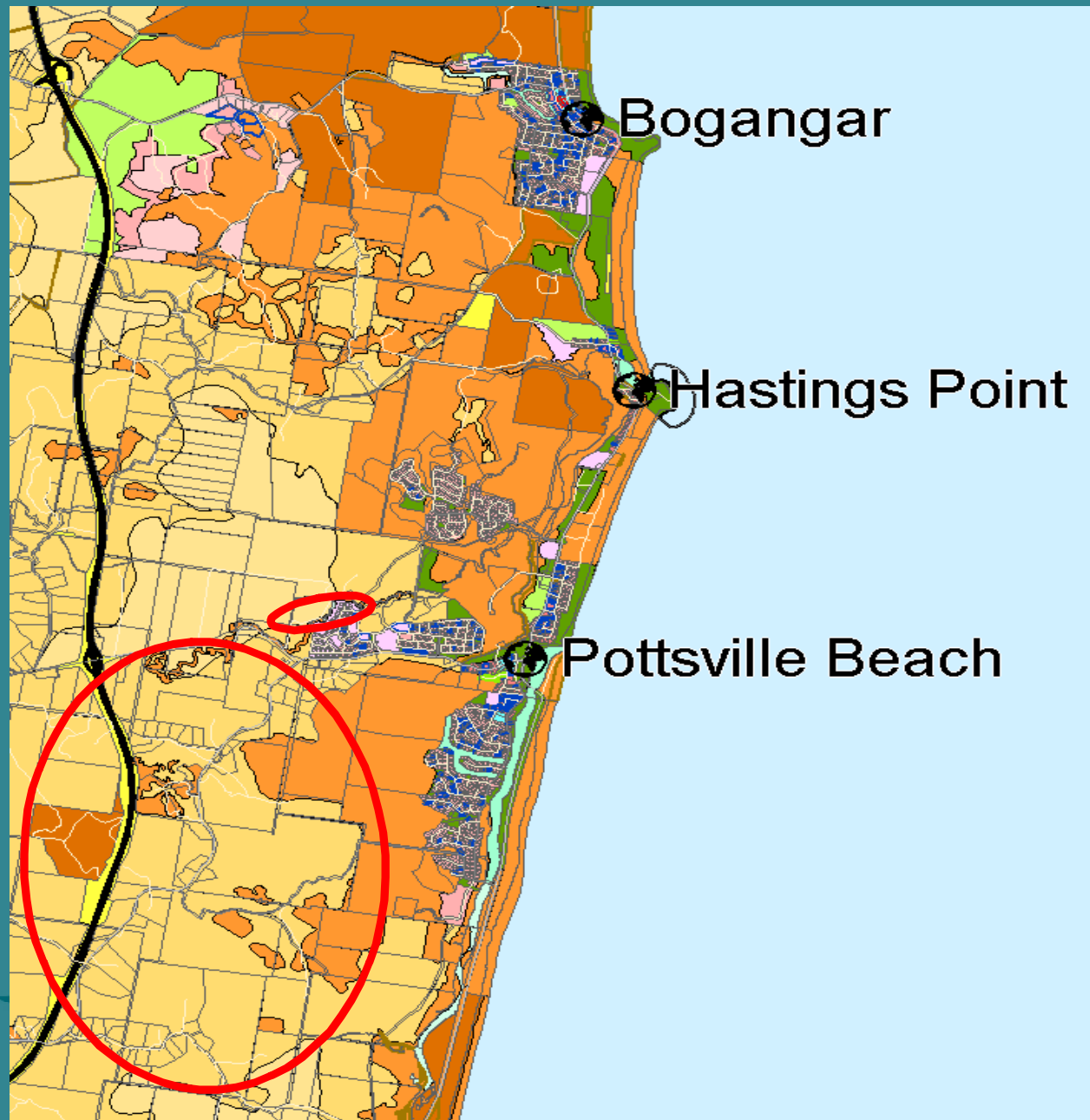
2. Full range of government approvals required for augmentation of plant in excess of 18,000ep

3. Approvals for augmentation will require more effluent reuse

- New development is on fringe of catchment far from WWTP
- Existing developed areas provide limited opportunities for viable and cost effective reuse

4. Creek / Estuary discharge unlikely to gain community or Government Agency support

Further Development



Options for Augmentation include:

1. Shift some load north to Kingscliff WWTP and bring forward its next Augmentation

- Cabarita Bogangar Catchment logically separated (Cost and septicity / odour issues) 5300 ep
- Similarly for Tanglewood 1200 ep
- This total of 6500 ep unlikely to be adequate for proposed residential and industrial land development south and west of Pottsville
- Next Augmentation will require full range of government approvals (existing river discharge not guaranteed, more reuse and a deep sea release may be required)

2. Augment Hasting Point WWTP with Deep Sea Release

- Government reuse requirements may not be achievable
- Very costly
- May not be acceptable to community

3. New WWTP located south or west of Pottsville

- Reuse requirements likely to be 3rd pipe as a minimum
- Discharge of unused effluent to:
 - Tidal discharge to creek / estuary (unlikely to gain community or Government Agency support)
 - Deep sea release (May not be acceptable to community, costly)

Next Steps

- 1. Determine if the Urban and Industrial release areas south and west of Pottsville are a short term priority of Council given:**
 - The financial and resource commitments required to ensure sewerage capacity to existing zoned land.
 - The extended time frame for take up of available and approved treatment plant capacity.
- 2. If so, a concept to sewer, reuse and dispose of excess effluent needs to be developed in consideration of the various augmentation options, noting the key issue is effluent disposal.**
- 3. In principal approval from the relevant approving agencies for effluent disposal requirements and WWTP site needs to be gained early in the process.**

Discussion

WWTP and Dune Exfiltration Area

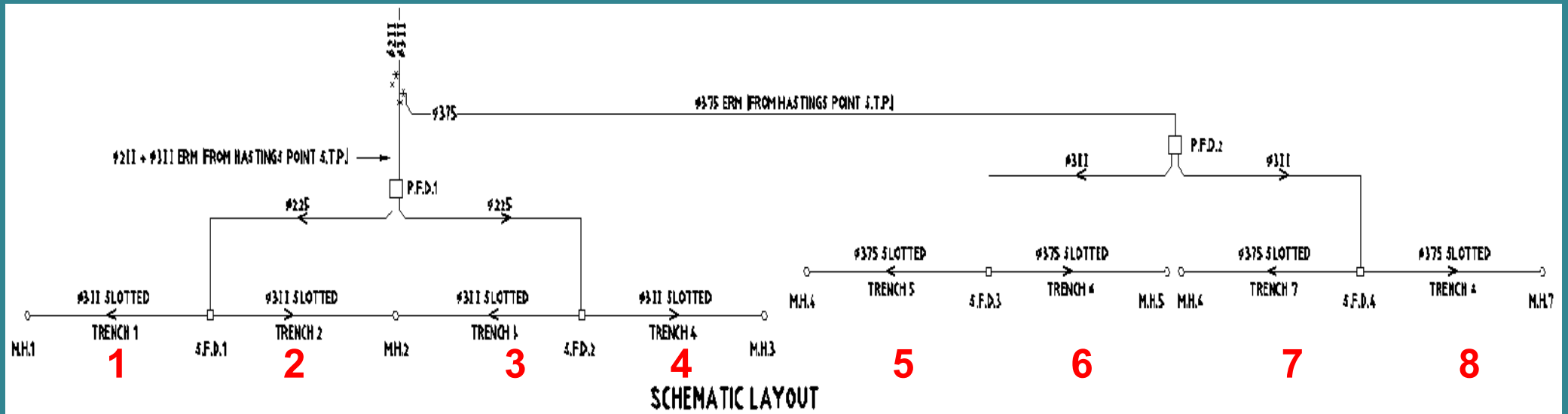


WWTP



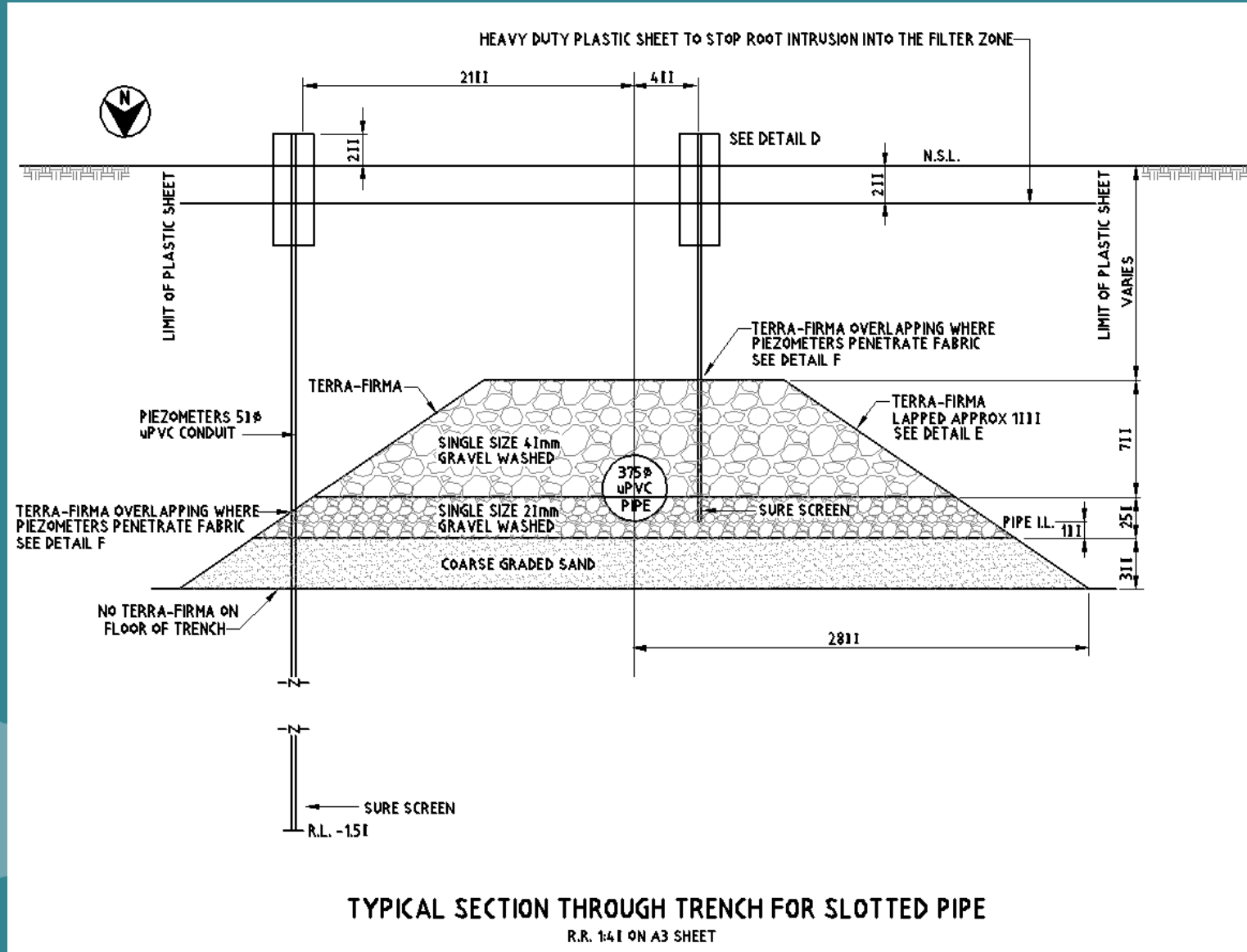
Coastal WWTP's and Catchment Capacity

Dune Exfiltration Schematic – Exfiltration Area



- 8 x 100m sections of Trench
- Need to rest sections between uses
- Capacity is based on use of 4 sections of trench
- Capacity unlikely to be greater than 18,000 ep once filtration issues rectified

Dune Exfiltration – Typical Cross Section



Sand Blinding Problem – reaction with impurities in dune sand



Blinding Layer After Drying



Treatment Processes

Primary Treatment

- step screen
- grit removal

Secondary Treatment

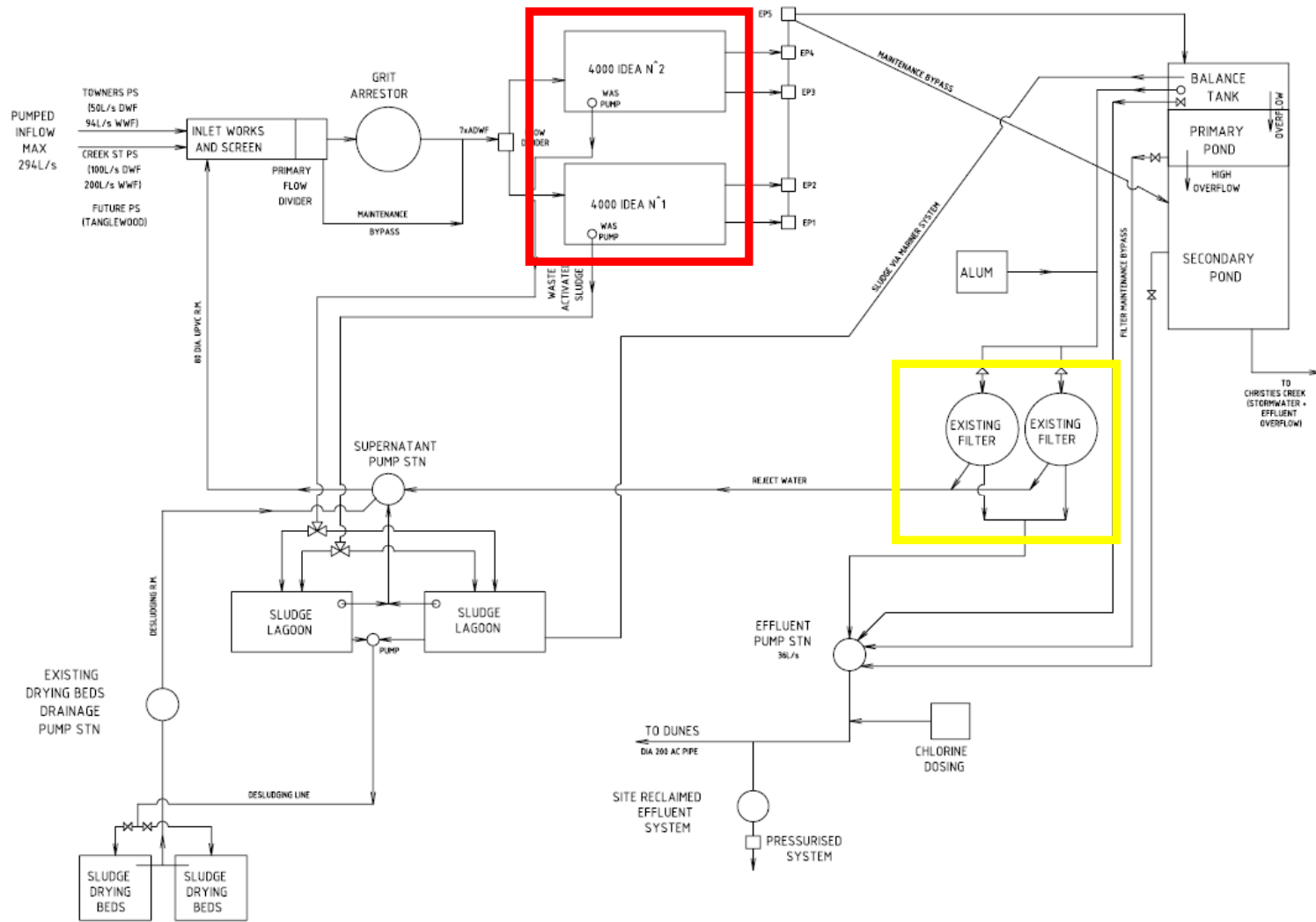
- biological reactor
- alum dosing for settlement
- Phos. removal (alum)


Tertiary Treatment

- Phos. removal (alum)
- Filtration (disc 10 μ m)
- Chlorine dosing

Effluent Disposal

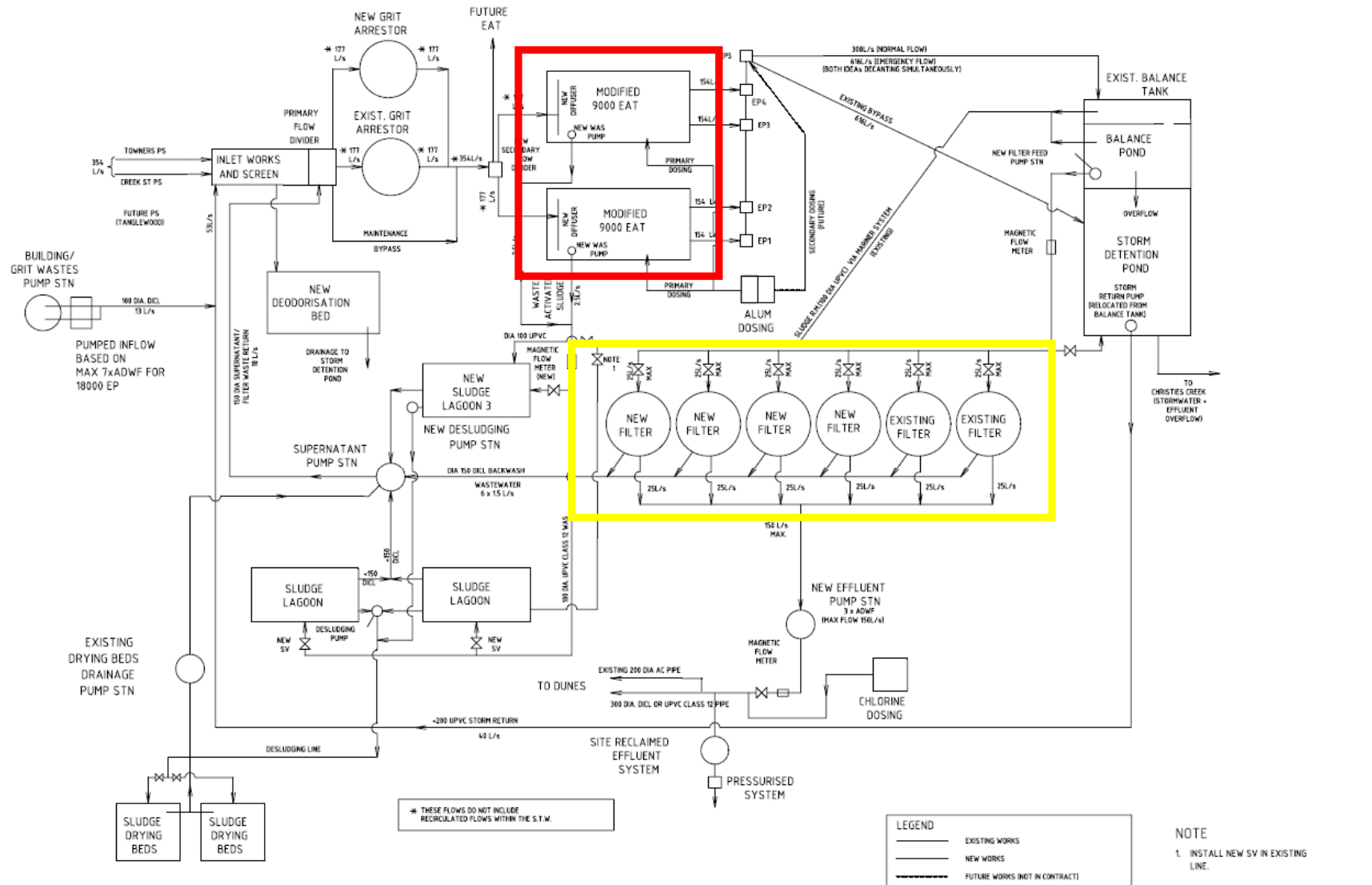
- Dune Disposal
- Storm detention
- Christies Ck



NO. DETAILS OF AMENDMENTS APPROVED DATE			DEX PERSON DIRECTOR - GENERAL DPWS INFRASTRUCTURE AND ENVIRONMENTAL SERVICES - WASTEWATER SERVICES LEVEL 9, MARSH BUILDING 2-24 RAMSAY PLACE STONEY 2000 PHONE (08) 93286873 FAX (08) 93286177		DRAWN BY CHECKED BY DESIGNED BY PROJECT NO.		 DPWS NEW DEPARTMENT OF PUBLIC WORKS AND SERVICES		HASTINGS POINT STP AUGMENTATION EXISTING PROCESS SCHEMATIC		DRAWN BY DATE PROJECT NO.	
									0100760 - 7			

Coastal WWTP's and Catchment Capacity





DETAILS OF AMENDMENTS NO. AMEND DATE		DICK PESSON DIRECTOR - GENERAL DPWS INFRASTRUCTURE AND ENVIRONMENTAL SERVICES - WASTEWATER SERVICES LEVEL 5, MURIEL BUILDING 1-35 BARRON PLACE STONEY CREEK PHONE (08) 93728673 FAX (08) 93728177	DRAWN BY CHECKED BY DATE PROJECT NO.	DEPARTMENT OF PUBLIC WORKS AND SERVICES	HASTINGS POINT STP AUGMENTATION PROCESS SCHEMATIC FOR 18000 EP	DRAWN BY DATE PROJECT NO. 0100760-8
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Coastal WWTP's and Catchment Capacity



Bio-Reactors



Original Continuous Sand Filters



New Disc Filters



New Disc Filters



Likely to go back to Original Sand Filters, need 6

