

Ordinary Meeting

Meeting Date: Tuesday, 28 March, 2017

Location: Council Chambers, City Administrative Building, Bridge Road, Nowra

Attachments (Under Separate Cover)

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**Economic
Development**

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Economic
Development
Strategy
2017-2026

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Economic Development

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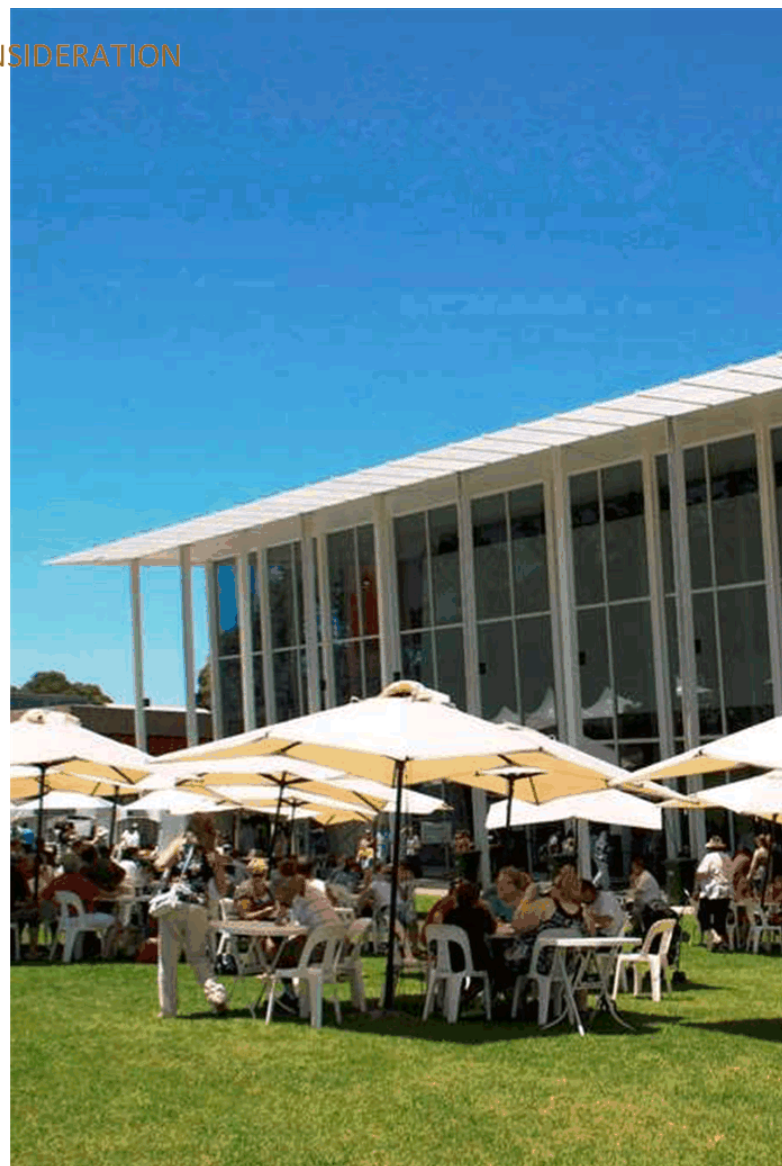
SHOALHAVEN ECONOMIC DEVELOPMENT STRATEGY 2017-2026

Prepared by the Economic Development Office with the assistance of Locale Consulting Pty Ltd and a Project Steering Group comprising representatives from internal and external organisations.

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1. Overview

The Shoalhaven is experiencing exciting times, with major infrastructure projects making the area ever more accessible and creating opportunities to expand on the existing productive, entrepreneurial and robust businesses of the area. Combined with readily available and reasonably priced residential and commercial land, and an extensive skilled labour force, the area already has some serious competitive advantages that are only expected to grow.

This Strategy outlines a 10 year vision for Council's involvement in economic development. Building on the area's competitive advantages across core economic drivers, the Strategy proposes directions across a range of industry sectors and Council activities that also align with Council's broader commitments to its resident and business communities through its Community Strategic Plan.

Over time, the Strategy will be supported by a range of more detailed plans and strategies. These will include an Implementation Action Plan, a Business Attraction Plan, Infrastructure plan as well as a number of targeted Sector Strategies that will examine specific industries and how these can grow and benefit those living in the Shoalhaven.

The document has been prepared by Council's Economic Development Office with input from a Project Steering Committee and utilising extensive consultation across a range of internal and external stakeholders. With broad support for its directions, there is no doubt that the Shoalhaven has a highly productive future.



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2. Strategic Context

This Strategy provides an implementation platform for the many and varied economic development opportunities that have been identified through detailed stakeholder discussions and review of several local, regional, state and Federal level initiatives. The Strategy also builds on the Community Strategic Plan's prosperity objectives to create:

- An economy with growing employment opportunities based on Shoalhaven's distinct characteristics, advantages and natural qualities;
- An economy that supports and is supported by growing, diverse and changing communities; and
- Effective promotion of Shoalhaven's investment, business and job opportunities, lifestyle attractions and vision.



2.1 Locality Context

The Shoalhaven's major regional centre of Nowra-Bomaderry is located just two hours' drive from Sydney, one from Wollongong and just over two from Canberra - that's more than 6 million people and four international ports within easy reach. With two regional centres at Vincentia (Jervis Bay & St Georges Basin) and Ulladulla-Milton, 49 towns and villages, and 109 beaches, there's also lifestyle choices to match the economic opportunities - from beach havens and hidden valleys to functional and energetic urban areas.



The Shoalhaven area is also experiencing significant investment in key transportation and other infrastructure, creating business opportunity and bringing more potential to

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continue the current strong growth. By 2019 Princes Highway upgrades at Berry will be complete, with the Berry to Bomaderry Upgrade and Albion Park Bypass being the next works in the pipeline - ultimately creating uninterrupted dual carriageway from Sydney to Nowra.

When combined with the “Beyond Nerriga” westerly connections to the Hume Highway and Canberra, and southern connections to the greater NSW South Coast, Nowra and the Shoalhaven more generally suddenly becomes a major hub with growth in population, commerce and opportunity.

In the Defence sector, the HMAS Albatross and HMAS Creswell bases provide a pipeline of works and increasing Defence activities which are one of the most valuable of any industry sector. Investments in retail, multi-unit dwellings and commercial buildings all provide a strong position for the future.

Increasing grant funding opportunities and packages, such as the Federal Government’s \$20 million South Coast Jobs and Investment Package [2017], combined with the State Government’s \$50+ million Jobs for NSW Regional Solutions programme [2016], also provide a great opportunity in the short to medium term (and other programs in the long-term) for business to establish and expand in the Shoalhaven. These initiatives, and ones that will come into the future, are supported by Council and this Strategy.

2.2 Regional Context

With improving road access, the Shoalhaven’s renowned self-sufficiency and entrepreneurialism will be even better linked to the surrounding region, continuing to improve links to export markets and major populations in Wollongong, Sydney and Canberra.

To the north, heavy manufacturing of the “old” Illawarra is being replaced with new innovative and adaptive business opportunities, with the Shoalhaven’s ready supply of industrial and employment land playing a key part of the region’s ongoing growth. With University of Wollongong’s Shoalhaven Campus delivering a range of health, human services, business and research & development activities locally - the smart and innovative jobs and employees of the future are also becoming more readily available.

To the south, the Shoalhaven is also well connected to the South Coast region. These areas are synonymous with agriculture and tourism activities, and with natural lifestyle attributes which are desired by many seeking sea and tree-change opportunities. High value niche sector opportunities are also present across the region, with the bio-technology and equine industries (among others) having recently been developed and investigations completed.



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3. Existing Economic Situation

There are many elements to the existing economic situation which are relevant to this Strategy. An overview of the demographic and various industry sectors that are represented in the area are provided in this section. Other factors are also explored in Section 4, which reviews the Shoalhaven's economic drivers and competitive advantages.

3.1 Demographic Overview

Outside of Sydney, Wollongong and Newcastle, the Shoalhaven is the second largest regionally based Council by population size in NSW. According to Council's Economic Development Office (Jan 2017), its economy supports an estimated workforce of almost 36,000 people, with a population estimated at almost 100,000. According to IDForecast modelling (Jan 2017) this population is expected to grow by at least another 20% by 2036, with around 7,400 new jobs to be created.

Over time, and as with many regional areas, the median age of the population is also expected to increase, creating demand in core health, retirement and human services sectors. With a health hub already designated and planned to grow around the Shoalhaven District Memorial Hospital in Nowra, and linked with the University of Wollongong's Shoalhaven Campus, the area is expected to remain a leader in health services and related medical related education.

In recent times the area has also experienced rapid population growth, with an expanding real estate sector now driving a new series of residential and commercial development opportunities which are likely to lead to even further growth. With a healthy lifestyle and affordability driving both young and old to move to the area from Sydney and elsewhere, there is no doubt that the Shoalhaven will continue to grow, placing a strong emphasis on increasing productivity and investment in the economy.



Increasing Workforce / Jobs

2006 = 32,498

2016 = 35,745

2036 = 47,175



Increasing population

2006 = 90,505

2016 = 98,636

2036 = 119,467

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3.2 Industry Sector Overview

The Defence and Manufacturing sectors have traditionally been key industry sectors for the Shoalhaven, and will continue to be into the future, having already supported the substantial growth in the economy (GRP) and residential approvals over the last five years [REMPAN Economic Profile Jan 2017]. The Defence industry is the enduring backbone of the economy, with its future in the Shoalhaven now secured and growth path established via capital expansion at the local bases of HMAS Albatross and HMAS Creswell over the 2000-2018 period.

The manufacturing sector has meanwhile remained surprisingly strong and has continued to grow despite declines in other localities - a nod to the sectors adaptability and preparedness to grow and invest in niche sectors for domestic and international markets.



As of 2011, the Health / Social Services industry sector is now the largest employer of all, and is expected to continue to grow rapidly in coming years. Education / Training has also grown in recent times, albeit at a slower rate. Together these sectors are critical to the continued care and education of our community - areas where co-operation and ongoing dialogue with Federal and State Governments and the private sector are most important. These are also strong areas for the Shoalhaven community, with significant TAFE and University establishments, along with the regional health hub at the Shoalhaven District Memorial Hospital.

Whilst not as valuable in economic terms on a "per job" basis, the tourism and retail sectors will continue to play very important roles, creating and building upon the enviable natural lifestyle attributes of the area, as well as providing entry level employment opportunities for the area's young. With a strong tourism and events ethos at Council and continued growth in the tourism sector over recent years, there is no doubt that it will continue to deliver important vibrancy and exposure of the area – also important elements to a successful business economy.

But not all jobs have the same value to the local or regional economy, with some jobs adding more value than others on a per job basis, through nett exports, higher wages or the flow-on effects through the economy that they create. As such some of the smaller employing sectors still play an

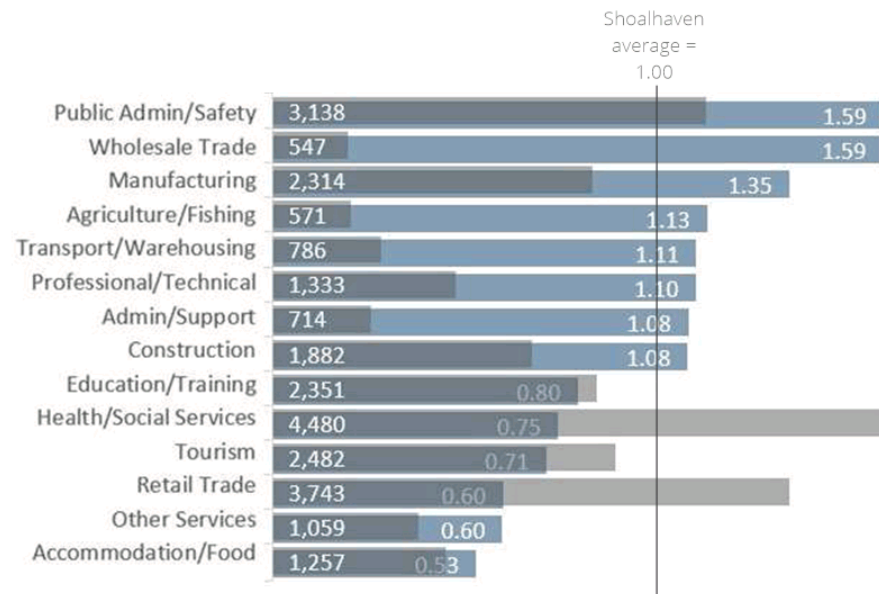
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important role to the overall economy. For example the Professional / Technical Services, Transport / Warehousing, Agriculture / Fishing, and the Wholesale Trade sectors are typically both high growth and high value sectors supported by national and international markets.

This Strategy seeks to broadly support jobs growth through investment, increasing productivity and growing strategic opportunities as they arise across the economy. It also places a particular onus on supporting jobs growth on high value areas over coming years - areas that are highlighted in the following graph [REMPAN February 2017].

Interpretation:

- Grey bar = key sectors in the Shoalhaven by number of jobs. Number of jobs shown on left of bar - e.g. Public Admin/Safety = 3,138
- Blue Bar = value-add of each individual job, as compared to the value of the average Shoalhaven job which is equal to 1.00. Value of each job in each sector is shown at right of the bar - e.g. Public Admin/Safety = 1.59
- The more jobs in those sectors with greater than average value add will provide the highest economic gains to the Shoalhaven



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4. Economic Drivers and Competitive Advantages

Drivers of regional economies are generally similar for all, with a region's competitive advantages within each driver creating opportunities that can then be targeted. Shoalhaven's competitive advantages across four key economic drivers - Education and Skills, Population Change, Market Access and Partnerships and Planning - are outlined below.



4.1 Education and Skills

On the back of the large Royal Australian Navy training bases in the area, the Shoalhaven has a strong and growing community culture based around education and training. On top of the two Naval training bases, the area also has TAFE campuses at Nowra and Ulladulla, and the University of Wollongong's Shoalhaven Campus in West Nowra, both providing strong opportunities for reinforcing localised pathways to tertiary education. The area also has many businesses that have an internalised strong training and skills development focus and many other smaller Registered Training Organisations (RTOs) that service specialised needs.

Labour force skills level are correspondingly high, with achievement in the area of advanced diploma, diploma or vocational qualifications being 7.5% higher than regional NSW average and almost 10% higher than Wollongong. Primary and Secondary schools are also available, with both private sector and public schools across a number of the urban areas, with the Shoalhaven being strong in the providing pathways from school to tertiary and vocational education.

The Shoalhaven labour force is characterised as a skilled one that has shown an adaptability to change and a continuous improvement philosophy. Jobs numbers have continued to grow, and participation rates have remained

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steady over a long period despite an aging population, highlighting the lean, productive operations of many of the high value business sectors of the area. With opportunities to better match skills and education to workforce requirements, our strong foundations are primed for the needs of the future.



4.2 Population Change

The Shoalhaven has maintained a strong level of population growth over the last 10 years (2006 - 2016), even throughout the GFC recovery period. However in more recent times, that growth has quickly expanded, with the increase in population more than doubling between 2013 and 2014, being an annual increase of 1.4% in 2014, followed up by 1.2% in 2015. Over the next 20 years, population growth is conservatively estimated to be around 20,000 people, though possibly much more.

This population growth will continue to push jobs growth, particularly in areas such as construction and retail, creating more lively urban areas and a better place to live. Council's planning and economic development teams have both employment and residential land release areas in the pipeline, as well as fully serviced industrial land available on the market.

As a major land holder, and in the industrial sector a major developer, Council is able to respond positively to market movements, ensuring a steady supply of affordable employment land into the foreseeable future. This role of developer also provides a unique connection and rapport between Council's Economic Development team and the businesses that are moving and/or expanding in the Shoalhaven, teaming them up with the types of contacts and networks that would otherwise take years to develop.

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Recent and ongoing road infrastructure improvements are continuing to open up the area for market access and freight movement. On top of the 6 million + people surrounding the Shoalhaven, international and interstate connections are also readily available. For example, the Port of Port Kembla is only one hour by road, with Port Botany just over two hours. Sydney airport is a similar distance and as of September 2016, Canberra is now an international air hub - meaning access to markets throughout Asia in a matter of hours (and without the flight curfews of Sydney!).

The Shoalhaven's existing manufacturing industry is testament to the accessibility of our markets. With the sector having grown in the face of rapid declines elsewhere, they now stand ready to expand further and faster. Similar opportunities exist for high value agricultural produce, with the Canberra Airport link providing access to markets where every hour counts.

Whether as a hub for regional or international distribution, or to service localised markets, the Shoalhaven can provide a range of opportunities without the cost and other barriers of metro areas.

4.4 Partnerships and Planning

The Shoalhaven's position as a gateway to the South Coast, and with close market access and available employment land stocks, places it as a meeting point for many regional, State and Federal programs. Council's Economic Development Office has also developed and supported a number of strong and effective Shoalhaven based business and industry networks, creating the web that helps businesses to establish and expand through complementary knowledge, services and advice.

The Federal Government is set to roll out the South Coast Jobs and Investment Package - \$20 million to assist in targeted investment to leverage export and to diversify the economy. The NSW Government's Jobs for NSW program has just been launched, with at least 30% of the \$190 million to be allocated to regional areas over the next four years.

Along with organisations such as NSW Departments' of Premier & Cabinet and Planning & Environment, the Illawarra-Shoalhaven Joint Organisation and Regional Development Australia (Far South Coast and Illawarra), there are a range of partners that are able to work together in and around the Shoalhaven to support economic growth. When combined with localised plans and strategies such as this and the Illawarra-Shoalhaven Regional Plan, there are clear building blocks and funding sources in place to achieve long-term results.



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5. Achieving a Positive Future

As outlined throughout the previous section, the Shoalhaven is changing, with a rapidly evolving real-estate, technology and economic environment. How we are able to capture and take advantage of this change is the key to the success of this Economic Development Strategy.

5.1 Vision

The vision for economic development over the next 10 years is:

To build upon the already high levels of local productivity, entrepreneurialism and inter-connected business relationships to provide sustained economic growth, through a diverse and robust economy, that is supported by a skilled and educated workforce that is able to balance work with an attractive and healthy lifestyle.

5.2 Objectives

This long-term vision is to be achieved through a combination of growing employment opportunities, increasing the quality of those opportunities, supporting entrepreneurial flair and innovation, remaining responsive to change and balancing economic objectives with the achievement of a balance with environmental and social needs via an enviable lifestyle. These directions are encapsulated in the following core, measurable objectives:

Objective 1: To grow in number of employed people within the Shoalhaven commensurate with population growth

Objective 2: To increase the level of Gross Regional Product per worker

Objective 3: To sustain, as far as possible, the level of workforce participation despite an aging population

Objective 4: To enhance the liveability of the Shoalhaven



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5.3 Getting Results

The remainder of this Economic Development Strategy document outlines how Council, together with partners and collaborators, will achieve the above vision and objectives. It provides a range of actions across specific industry sectors, as well as those that sit across a range of sectors and the community including core areas of:

- Sustaining and improving productivity;
- Leading and being innovative;
- Stimulating catalytic opportunities;
- Creating liveability and place;
- Utilising Council's employment lands;
- Communicating economic development; and
- Marketing and promotion of the Shoalhaven.

These broad based actions, and key industry sector actions are set out over the next two sections.



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6. Broad Based Actions

Broad based actions are those that impact on more than just one industry sector. They typically involve operational and community based opportunities to improve economic development outcomes, as outlined in the following pages.

6.1 Sustaining and Improving Productivity

The businesses of the Shoalhaven economy have a track record of being innovative, productive and sustainable, evidenced by consistent participation rates, a strong leading edge manufacturing sector and a sharing but entrepreneurial approach. Strong networking groups exist across many sectors, highlighting the concerted efforts of Council, other agencies and the business community to make the Shoalhaven a prosperous place to be.

Into the future, a key aim of this Strategy will be to maintain and improve productivity across the economy. Productivity in this context is far more than just new development, but utilising new technologies, processes and making wise investments to get more out of existing markets or venturing into new ones. This will mean that the Economic Development Office will continue to work closely with existing businesses, helping them to adapt and change as new technologies arise, shifting how they operate to match markets and broader economic conditions and to ensure

that, wherever possible, businesses increase the size of their workforce over time.

In doing so, the Economic Development Office, in conjunction with other regional partners, will continue to establish rapport, build business relationships and be a valuable source of information dissemination within the business community.

Recommended Actions

- 6.1.1 Local business support services: Maintain a networked approach to business assistance through the availability of, and connection to, a comprehensive suite of business support services.
- 6.1.2 Business training delivery: Continue to work with local business and business leaders to deliver targeted business training and strategic development.
- 6.1.3 Start-up and entrepreneurial support: Continue to joint venture with business groups or other organisations / individuals to host information sessions for start-ups and to provide entrepreneurial support, including mentoring programs for them.



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6.2 Leadership and Innovation

With a great balance of an existing skilled workforce, enviable natural environment and healthy economy, the Shoalhaven has the opportunity to further establish itself in areas of leadership and innovation - growing the existing liveability of the city through a greater range of community, recreation, cultural and economic opportunities. From the implementation of high speed broadband and other technologies, to the ever improving pro-active and outcome focused Council, this potential includes:

- Fostering a greater understanding of economic development within Council and the community (see Section 6.6);
- Encouraging advanced technology opportunities, start-ups and creative industries that occur through the take-up of key infrastructure such as the high speed broadband through innovation and skills;
- Establishing opportunities for alternative technologies and how Council can assist business to become energy efficiency through renewables and other means;
- Identifying opportunities to engage technology in Council's activities and into the community through programs such as the Federal Government's *Smart Cities & Suburbs* program being released in 2017;

- Rewarding business excellence through appropriate recognition and highlighting the many success stories of the Shoalhaven;
- Leveraging existing partnerships such as Council's Sister City, strategic business alliances, trade and international relations; and
- Taking a proactive approach to Council delivering both profit and non-profit services that advance the community's wellbeing and Council's long-term financial sustainability.

Ultimately, Council has the opportunity to be a leader in the Shoalhaven community and in economic development circles, recognising the best opportunities that the area has to offer.

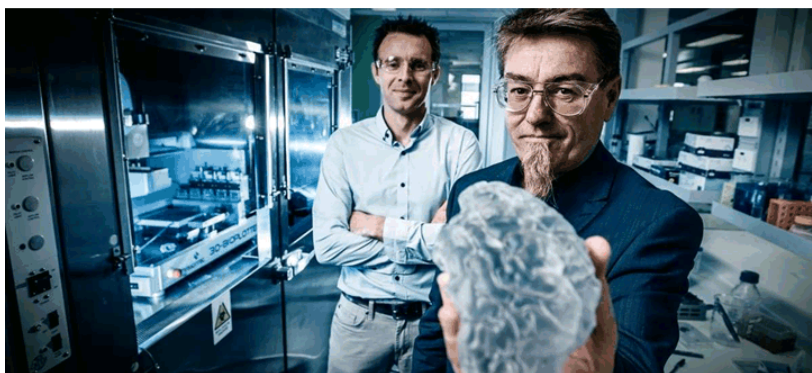
Recommended Actions

- 6.2.1 Engage with broadband and other technologies: Continue to work with NBN Co and others to facilitate the implementation of high speed broadband and to recognise associated opportunities with the development of technologies that assist business and lifestyle outcomes.
- 6.2.2 Explore technology opportunities: From renewables to creative industries and technology start-ups, create a platform for exploring the use of technologies that enhances lifestyle, creates sustainability and provides leadership for the jobs of the future.



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- 6.2.3 Council taking the lead: Explore opportunities for Council to increase its participation in key areas that increase liveability of the area, foster improvement to the diversity of its income streams, and provide long-term opportunities.
- 6.2.4 Leverage partnership opportunities: Explore opportunities to leverage economic growth through existing and potential future partnerships with sister cities, trade partners or local partners, such as not-for-profits and other agencies.
- 6.2.5 Be responsive to opportunity: The Economic Development Office remain responsive to unforeseen opportunities and ideas that may arise through business networks or other contacts to nurture these to a productive state where possible.



6.3 Stimulating Catalytic Investment Opportunities

Many in the business and general community recognise the importance of “game changing” projects, the ones that on their own can make a sustained and substantial difference to the Shoalhaven economy or elements of it. Many in the community express the frustrations of seeing these projects delayed or disappearing over time. These game changers are often catalysts to an even bigger investment - for example the development of a boat harbour not only facilitates boating activities, but enables tourism opportunities, creates manufacturing and repair needs, has support services and retails needs for those users.

This type of catalytic investment differs from traditional retail development for example, which can simply redistribute existing jobs throughout the economy. Catalytic projects will typically create new opportunities or expand on existing opportunities which create new employment through new export or value added potential. Current or future examples in the Shoalhaven may include:

- Nowra CBD, with several opportunities to provide major revitalisation of the inner core of the Nowra CBD area;
- Nowra “Civic Precinct” around the Council Administration Centre and Shoalhaven Entertainment Centre;
- Bundanon’s Riversdale Masterplan, a unique arts and cultural institution, with major tourism potential;

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- Shoalhaven Motorsports Complex, a multi-use sporting facility and including the associated industry park linking to the existing Albatross Aviation Technology Park;
- Secondary education facilities, such as the Trinity College Environmental Field Study Centre and Scots College facilities at Kangaroo Valley and Culburra creates great exposure of the area for 1,000's each year;
- Shoalhaven wellbeing and health campus in Nowra, providing an integrated, long-term approach to health, nutrition and human services;
- Waterfront activation, particularly on the Shoalhaven River, Huskisson foreshore and Ulladulla Harbour; and
- Shaolin Temple, being a major international tourism proposal to the south-east of Nowra.

A range of legislative and delivery issues exist for some of these projects, with the existing legislative framework meaning that councils throughout the State have been unable to respond effectively to appropriate opportunities. These issues are exacerbated by complicated public land and environmental considerations which can be seen to override social and economic balances. Whilst not every project is a catalytic opportunity, and not every catalytic opportunity should necessarily proceed, having better co-ordination and delivery mechanisms for those that are desired is paramount.

Recommended Actions

- 6.3.1 Planning and Associated Legislation: Continue to advocate for changes to planning and associated legislation to enable a more strategic and visionary approach to planning and implementation of development.
- 6.3.2 Implementing Catalytic Investment Opportunities: Establish a resource (or resources) to assist catalytic project proponents to establish viable concepts, work through planning approvals systems, engage with potential investors (public or private) and deliver projects through a whole of Council approach.



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6.4 Creating Liveability and Place

There are a diverse range of issues that contribute to liveability of an area or place. Whilst the Shoalhaven has extremely popular and enviable natural assets that must be protected, enhanced and promoted, in recent times the concept of “place making” has emerged along with more traditional planning to position communities to be more vibrant, connected and welcoming. Liveability and lifestyle are key attributes in attracting and retaining people to the area, particularly for localities such as the Shoalhaven (and many other regional areas that the Shoalhaven competes with) which rely on in-migration for population growth.

Business and commerce play a key role in this process along with communities and Council, with sectors like retail and food services contributing to activity on streets and towns throughout the area. This activity is particularly important in locations such as the Nowra CBD, where physical improvements, retail diversity and vitality need to be balanced to create attractive places where people want to be.

Associated with our enjoyment of our towns and villages is the ability for residents to be able to afford to participate, particularly in terms of housing. Whilst the Shoalhaven is more affordable than Sydney, prices are rising, with levels of mortgage stress and affordability issues also increasing.

The Shoalhaven also needs to be a functional and active place that is attractive for all ages. Focusing on catering for an aging population can result in resources being diverted from opportunities for younger people - the people that we need to retain and attract to service an aging population over the long-term. Creating vibrant and attractive urban areas with a range of activities that complements our beautiful natural resources is part of this balance of planning in an inclusive and long-term way.

At times, liveable and vibrant places can also be compromised by key land parcels and spaces that remain underutilised. These spaces are often owned by Government (including Council), Aboriginal Land Councils or non-profit entities where opportunities for greater collaboration may be available to partner and re-engage these areas to their surrounds or to activate non-urban lands to benefit sector specific areas - tourism or aged care for example.

Combined with balancing urban growth and the Shoalhaven’s renowned rural or peri-urban edges that are fast disappearing in the Sydney basin, there are many challenges to making the Shoalhaven a great place to live. What we do know, is that liveability and place making is more than just “beautification” - it’s a combination of actions and activities that need to be delivered across Council and the community.

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Recommended Actions

- 6.4.1 CBD revitalisation and local business participation: Continue to participate in CBD and town centre revitalisation processes, building capacity within the business community of the importance of placemaking.
- 6.4.2 Affordable housing opportunities: Explore alternatives for implementation of affordable housing within the Shoalhaven through a range of opportunities and processes associated with a comprehensive approach.
- 6.4.3 Youth orientated infrastructure: Continue to explore and advocate for active youth orientated infrastructure that has economic potential and creates a unique offering for the area.
- 6.4.4 Activation opportunities: Research and develop options to encourage both day and night time activation opportunities, potentially targeting selected urban centres before broader roll-out.
- 6.4.5 Strategic land activation: Explore options and opportunities for activation of key village, town centre and other land parcels owned by Council, the Crown, not-for-profits or Aboriginal Land Councils.



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6.5 Council's Employment Lands

One of the key competitive advantages of the Shoalhaven relates to the availability of relatively large quantities of serviced and ready to develop vacant employment lands. In fact the Shoalhaven contains almost 45% of the vacant industrial land in the Illawarra-Shoalhaven region, including large portions of Council and Crown owned land in South Nowra, at the Albatross Aviation Technology Park, Huskisson and Ulladulla.

This available land stock is the result of many years of strategic planning and development by Council's Economic Development Office in a concerted effort to link businesses with affordable land and growth opportunities in the Shoalhaven. As mentioned earlier, this provides Council with the unique opportunity to build rapport with new and expanding businesses, and to establish close links with desired economic development outcomes - a situation that is unlike anywhere else in NSW. In real terms this has meant that Council's Economic Development Office has been connected to over 200 industrial lots being developed generating around 3,000 jobs locally.

Given that the purchase of land happens at varying times through the evolution of a business, Council's Economic Development Office can package land, make network connections and establish relationships that meet the needs of the business at the time in which it is seeking to move or expand.

When combined with increasing access and a booming Sydney market, this means that the Shoalhaven is on the verge of significant growth in this area, creating jobs and a critical mass of employment to support future population growth. The continuation of the Economic Development Office's involvement in the sector, and how future land releases are designed and able to cater for the desired sector growth, will remain a key role moving forward.

Recommended Actions

- 6.5.1 Business strategy and implementation plans: Update formal business strategies and implementation plans for Council's industrial land stock that outlines Council involvement in and how the land will be developed over the long-term.
- 6.5.2 Continue to link economic development with land delivery: Maintain a close link between industrial land delivery and economic development outcomes through the continued reinvestment of funds into economic development projects and objectives.



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6.6 Communicating Economic Development

With increasingly sophisticated ways to stay in touch with key stakeholders, there are many opportunities in which economic development concepts, activities and achievements can be communicated. Opportunities to improve communications exist both within the Council organisation, as well as between Council and the businesses, agencies and communities in which it operates.

At a high level, regular news items via press, social media or e-news style formats can achieve broad reach, quickly communicating positive opportunities and achievements. Similarly the “prosperity” aspects of the Community Strategic Plan are highly valued by the community, but undersold in communications. At the more detailed level, continuing regular meetings, updates and networking opportunities will also provide critical links between businesses, agencies and Council.

Within Council, particularly when compared with other more regulatory orientated services that are delivered, there are relatively few that have a close understanding of the role and benefits of economic development. Better cross-pollination of knowledge will ultimately provide a greater awareness of Council’s broader roles and the issues faced by business in the area, in-turn arming Council staff with a greater capacity to positively respond to the business community in a proactive and positive way.

Recommended Actions

- 6.6.1 Internal understanding of economic development: Strengthen internal understanding of economic development and business through regular interaction at a number of staff levels.
- 6.6.2 Economic development “internships”: Establish “internship” type arrangements of internal staff to expose them to the activities and processes of the EDO.
- 6.6.3 High level management / director meetings: Maintain regular high level discussion between EDO and other senior Council staff to ensure a broad understanding of current EDO projects.
- 6.6.4 Work with external business groups: Maintain support, involvement, collaboration and communication with key external lead industry and business groups to best share information and maintain a strong networking ethos within Shoalhaven businesses.
- 6.6.5 Work with external agencies: Continue to communicate, collaborate and partner with industry and government to deliver on shared economic development projects in a proactive and positive way.
- 6.6.6 Communicate economic development issues: Develop and issue a regular range of information to industry and public, aiming to raise the background level of understanding of economic development activities and successes.



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6.7 Marketing and Promotion

Marketing and promotion of the Shoalhaven is a key tool to facilitating business attraction, particularly given the opportunities associated with the availability and Council's ownership of industrial land. As differentiated from the communication of concepts, activities and achievements of economic development, marketing and promotion relate to the broader context of the Shoalhaven within the region and beyond.

Framed around the development of a Business Attraction Plan, marketing efforts should highlight the competitive advantages and opportunities for business and investment in the Shoalhaven, including the myriad of successful industries and businesses that have already established in the area. The Plan would identify three core steps: market research to better understand where opportunities lie, developing a range of marketing materials to suit intended activities, and implementing actions through a range of avenues.

As mentioned above, such marketing efforts would highlight existing business successes and identify industry leaders or champions to assist in creating a unique Shoalhaven brand. Specific industry segments can then also be targeted over time, typically following development or renewal of Sector Strategies and Business Plans that identify sector relevant opportunities.

Recommended Actions

- 6.7.1 Shoalhaven "Business Attraction Plan": Develop and implement a Shoalhaven Business Attraction Plan as a structured approach to marketing activities.
- 6.7.2 Business champions and success stories: Establish a range of "business champions" and "success stories" that provide positive factual examples of business in the region to be used in promotional activities
- 6.7.3 External promotion: Support activities such as attendance at key trade shows, events, awards and conferences where the Shoalhaven's opportunities can be highlighted.



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7. Key Industry Actions

Over and above the overarching directions of the previous section, there is a large cross-section of sectors that have a presence in the Shoalhaven area, many of which have specific opportunities that can be targeted. The following pages outline the key sectors that Council will target with specific actions over the life of this Economic Development Strategy.

7.1 Defence and Public Administration

The Defence industry is very important to the Shoalhaven economy with many jobs associated directly with the operational activities of the HMAS Albatross and HMAS Creswell Naval bases. Defence jobs are both high value and have a high return to the local economy and form a large proportion of the Public Administration and Safety industry sector, along with Council's own contributions and the presence of the South Coast Correctional Centre.

The presence of the Defence bases, which largely relate to personnel training and education, provide a strong platform for a community which is skilled, willing to learn and agile to change. This permeates through the broader community and is a cornerstone to the Shoalhaven's high levels of skilled workers.

The Defence industry also provides a basis for growth into other related areas, including the aviation, advanced manufacturing and Defence support sectors. The presence of the bases, together with the presence of the Albatross Aviation Technology Park (AATP) with its direct airfield access to HMAS Albatross, there continues to be numerous opportunities to work co-operatively with Defence whilst leveraging opportunities to support their presence.

Recommended Actions

- 7.1.1 Support retention of Defence facilities - Continue to support the long-term presence of Defence facilities through ongoing land use planning and co-operation between Council, State Government and Defence agencies.
- 7.1.2 Maintain Defence industry group relationships: Maintain and continue to support the Shoalhaven Defence Industry Group as an important industry liaison and lobby group.
- 7.1.3 Renew the Defence Industry Sector Strategy: Review and renew the Defence Industry Sector Strategy to reflect change over the last five years and to better establish a detailed direction for Defence support services.



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7.2 Manufacturing

The manufacturing sector continues to be a very strong element of the Shoalhaven economy, despite the issues that have been experienced in this sector in the Illawarra and elsewhere. The sector has very high output ratios per worker, along with high wages and high value-add to the local economy. When combined with the existing high number of jobs, this sector is clearly an important one for the overall Shoalhaven economy.

In recognition of this strong performance and an obvious resilience within the sector, it is recognised as one which has the opportunity to continue to grow with additional support and co-ordination via the existing business networks or by others. In particular, the sector is seen as one which could benefit from either an overarching industry group or through other efforts to capitalise on existing strong performance.

The sector is also one which may directly benefit from catalytic opportunities, for example how the sector has benefited from the Albatross Aviation Technology Park which now sees the area manufacturing and exporting specialist Defence and aviation capabilities around the world. This project represents the type of catalytic opportunity that can strengthen this sector and which may require sub-sector specific actions as and when these types of catalytic opportunities arise.

Recommended Actions

- 7.2.1 Industry co-ordination: Consider options for a greater level of industry co-ordination through, for example, the establishment an industry forum or showcase opportunities with a focus productivity and entrepreneurialism capacity building at the local level.
- 7.2.2 Target manufacturing through focused programs: In developing localised training and networking programs, target manufacturing as a core, strong and valuable local sector.
- 7.2.3 Leverage the manufacturing sector: Target new related industries that have the potential to strengthen the manufacturing sector, including being open and reactive to new opportunities within the sector, so as to ensure complementary growth opportunities are captured.



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7.3 Professional and Technical Services

The professional and technical services sector is another that has both strong growth and which is relatively high value in terms of wages and value add to the local economy. Associated with higher levels of education attainment, participants in the sector are also typically interested in lifestyle opportunities, through both the natural and built environments.



Once attracted to the area, the practical needs of those become more paramount, such as finding work for partners and welcoming new people to the area through networking and events - activities that are well catered for through the Shoalhaven Professional Business Association and others.

Identifying and responding to long-term skills gaps through co-ordination of local training and education is also important to growing this sector, reducing the need to attract people from outside the area and instead retaining young people as they study through local service providers before graduating into local jobs. Areas such as health, engineering and architectural/town planning professionals often appear to be those in most need, though localised trends will inevitably change over time and having a continuous read on the current trends is an important element of the high quality networking and professional business groups that exist in the area.

Recommended Actions

- 7.3.1 Support the Shoalhaven Professional Business Association: As an established industry group, continue to support the Shoalhaven Professional Business Association in their efforts to grow and support this sector.
- 7.3.2 Continue to address skills gaps: Continue to work with relevant agencies and organisations to identify and co-ordinate responses to ongoing and recognised future skills gaps in the professional services industries.

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7.4 Transport, Logistics and Wholesale Trade

Whilst “transport, postal and warehousing”, and “wholesale trade” are not large standalone sectors, they do have similar infrastructure needs and attributes and when combined, have much greater potential. These sectors also have two important traits - they are growing and have relatively high output and value add to the local economy.

These sectors are likely to become all the more important as road transport links are improved and as a consequence of a continued strong manufacturing sector and online commerce. The sectors have also been present in recent land sales, suggesting that this demand may already be resulting in growing economic activity. It is further noted that these sectors are also underrepresented when compared to the State and regional averages, again suggesting that there is latent opportunities available in the sector.

Recommended Actions

- 7.4.1 Advocate for necessary infrastructure: Continue to advocate for completion of “missing links” and infrastructure connections on the Princes Highway and Main Road 92, and for the maintenance and improvements of freight rail services and handling facilities at Bomaderry.
- 7.4.2 Prepare an Industry Sector Strategy: Prepare an industry sector strategy for the “transport, logistics and wholesale trade sector” that capitalises on increased road and rail access, land availability and distribution networks.



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7.5 Agriculture and Aquaculture

The agricultural sector, and in particular the dairy industry, is synonymous with much of the South Coast, including the green rolling hills around areas such as Berry and Milton. However the agricultural sector is much more diverse and advanced than what may be immediately apparent. In conjunction with current activities, the area also has a relatively unique climate that puts the Shoalhaven in a potentially important position to further develop as a “food bowl” and to provide opportunities to address food security over the longer term.

This situation is also relevant to the current pressures on agriculture around the Sydney basin. As a consequence of continued high population growth and the spread of urban land, high value agricultural activities are being squeezed out, presenting yet another opportunity for agricultural growth in the Shoalhaven given its access to key markets.

Agribusiness in the area also involves a range of boutique elements, including for example a number of wineries, specialised stock production and highly valuable oyster farming. Several producers export products, including to the Sydney and international markets - particularly in Asia.

Another emerging market involves the production and use of seaweed and shellfish, utilising the pristine waters of the Shoalhaven, including Jervis Bay, combined with advanced bio-technology techniques to create a range of high-value

products. Council and its partners have developed the Blue BioTech Shoalhaven brand to assist in the marketing and promotion of these opportunities.

However these sectors are also recognised as being relatively small, with co-ordination of producers and markets across the region being important to commercial success.

Recommended Actions

- 7.5.1 Approach agriculture from a regional perspective: Advocate for a regional approach to the agricultural sector, including strong involvement of the local councils and regional organisations.
- 7.5.2 Long-term position of agriculture: Undertake research and establish findings for how the Shoalhaven / South Coast may be positioned to respond to changing climatic conditions on the national scale, and changing population in the Sydney basin and its impacts on surrounding peri-urban areas.
- 7.5.3 Review and update Industry Sector Strategy: Prepare an updated version of the Agri-business Sector Strategy to integrate the needs of specific industry subsectors.
- 7.5.4 Continue support of the Blue BioTech Shoalhaven: Continue to pursue opportunities in the bio-technology sector through Blue BioTech Shoalhaven, measuring and reporting on successes and on Council's return on investment.

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7.6 Health Care and Human Services

The health care and human services sectors are the fastest growing in the Shoalhaven, matching broader trends in regional areas that also have an aging population. However the Shoalhaven also benefits from a number of health and human services related activities including:

- The designation of Nowra as the southern regional health hub by the Illawarra-Shoalhaven Local Health District;
- Identification in the State's Regional Plan for the expansion of the Shoalhaven District Memorial Hospital (sometimes referred to as the Shoalhaven Health Campus) including long-term master planning;
- Presence of medicine, health and human services courses and programs at the UoW Shoalhaven Campus, as well as through other Registered Training Organisations (RTOs) including TAFE;
- Ongoing demand for retirement living and aged services, including existing large scale proposals/approvals; and
- A strong human services sector with several large scale services providers based in the area.

In the past, from an economic development perspective Council has had limited direct involvement in the aging and the human services sectors - unlike the Kiama Municipal Council for example, which has pursued heavy involvement

and investment in the aged care and retirement living sectors through its Blue Haven business unit.

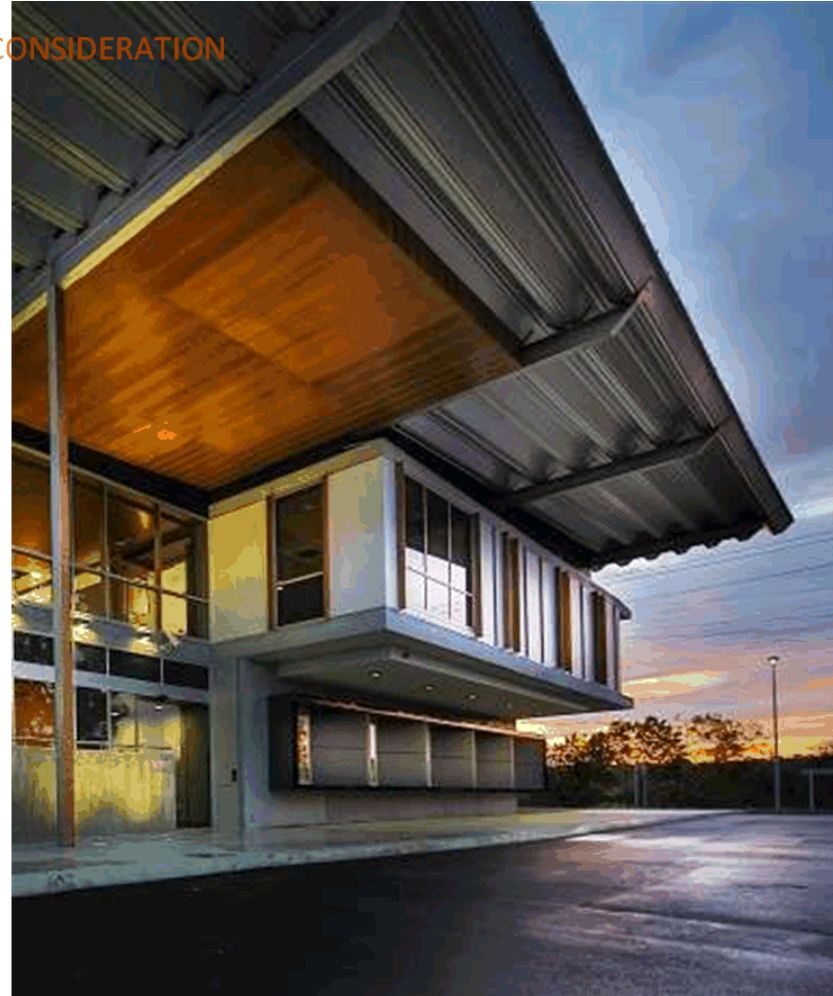
In the human services sector, the Shoalhaven area has a significant and increasing presence in terms of the number of organisations and related employment. However, co-ordination and facilitating the sector has been outside the economic development framework, despite occasional involvement in projects such as the successfully funded Mind the GaP mental health project with the University of Wollongong. Combined with the introduction of the National Disability Insurance Scheme (NDIS), this sector is likely to see significant growth in the short to medium term.

Resolution of the extent of future involvement in both these sectors should be developed within context of the broader industry review, potentially through preparation of a "Positive Aging" and a "Human Services" Industry Sector Strategies respectively. In the meantime, and as a matter of generally facilitating progress in these sectors, Council will also continue to advocate for health, aging, disability and human services improvements and necessary infrastructure.

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Recommended Actions

- 7.6.1 Plan and implementation of the Shoalhaven Health Campus: Work with the State Government to complete master planning and to commence the co-ordinated implementation of the Shoalhaven Health Campus (Regional Plan Action 1.3.1).
- 7.6.2 Prepare a “Positive Aging” Industry Sector Strategy: Prepare an Industry Sector Strategy to guide long-term needs for population change forecast to occur in coming years from an economic development perspective.
- 7.6.3 Prepare a “Human Services” Industry Sector Strategy: Prepare a “Human Services” Industry Sector Strategy from an economic development perspective and with a focus on the not-for-profit community services and rated industries.
- 7.6.4 Advocate for provision of infrastructure and services: Continue to advocate at State and Federal levels for infrastructure and services spending on health, allied health, aged care and community services needs in the Shoalhaven.



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7.7 Education and Training

As outlined in Section 4.1, the Shoalhaven has a strong and growing community culture based around education and training. On top of the two Naval training bases, the area also has TAFE campuses at Nowra and Ulladulla, and the University of Wollongong's Shoalhaven Campus in West Nowra / Mundamia - together providing thorough post-school offerings in conjunction with other RTOs.

In economic development terms, the availability of these assets provides the foundations for growth, with the way that these facilities then connect to the needs of local business being the key to success in this sector.

With master plans in place and room to grow, there are particular opportunities for the University over the long-term. With the neighbouring Mundamia urban release area due to be developed in the timeframe of this Strategy, it is important that it complements the future growth of the University campus, including physical links and enabling future accommodation that can provide for a more functional, energetic and active area.

In the area of vocational training, and particularly within the TAFE system, there are current changes being pursued to drive the connection of courses and workforce requirements. Being able to identify needs, both current and future, and

then co-ordinating and delivering on training that connects these gaps will remain critical - even as the gaps change.

Continued education and training provides an important platform for a skilled and agile economy, and Council will continue to work with all providers to ensure the needs of the business sector continue to be serviced.

Recommended Actions

- 7.7.1 Strengthen the presence of tertiary institutions: Continue to work with, and to lobby on behalf of, tertiary institutions in the Shoalhaven to encourage their retention and expansion into areas which best connect to community and business needs locally and more broadly.
- 7.7.2 Strengthen the UoW Shoalhaven Campus position within the urban fabric: Ensure future development in and around the existing UoW campus includes a strong relationship between new urban areas, existing local centres and the University.
- 7.7.3 Strengthen links between skills gaps, education and jobs: Identify skills gaps based on existing research and information and ensure that education and training providers are able to deliver on these needs.



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7.8 Tourism, Accommodation and Food Services

Tourism, and the closely related accommodation and food services sector, are very visible parts of the Shoalhaven economy. The sector provides a range of seasonal as well as year round opportunities, including growth in both domestic and the international tourism market with more than 3 million visitors in 2015. Tourism in this context, includes not only leisure tourists, but also the more valuable business and sporting tourism sectors. Similarly, the accommodation and food services components have a strong relationship to servicing local residents and businesses, not only tourists.

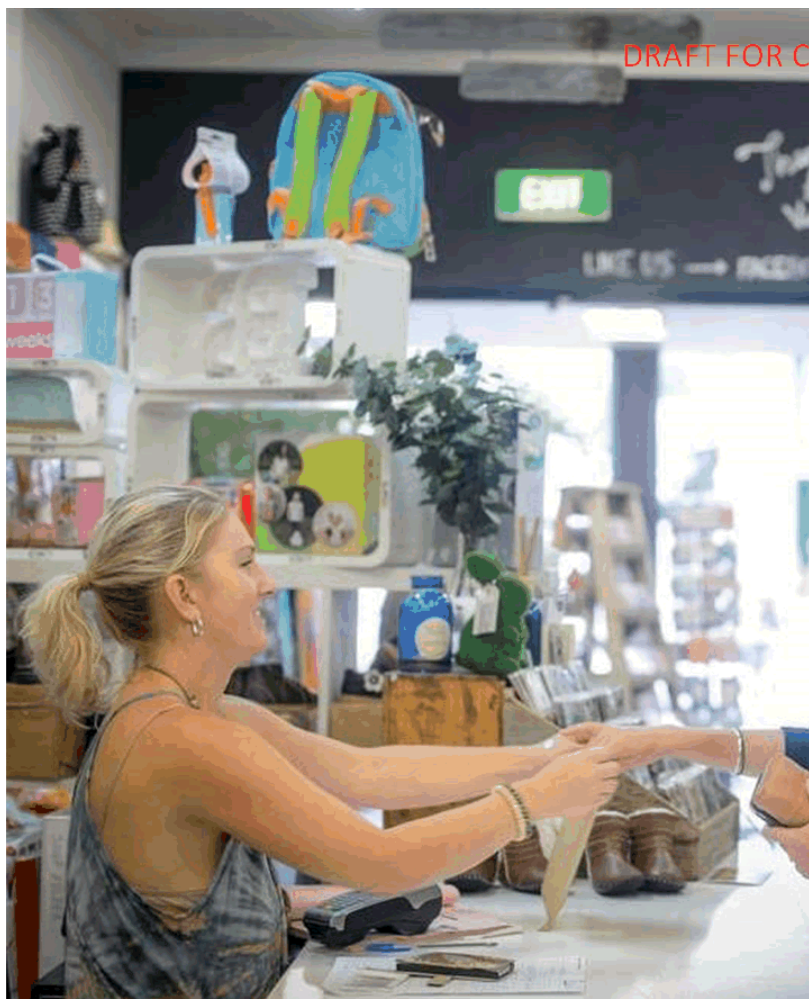
Building up the shoulder and off-peak times to match the booming summer period is a core economic driver for this aspect of the industry - creating sustainable businesses and products that can operate or work within the otherwise seasonal nature of the industry.

Council's Tourism Section undertakes a range of marketing and promotional activities, as well as events and coordination, and works with those that are interested in investing in the sector. Meanwhile the Economic Development Office is more involved on larger scale enabling infrastructure - such as waterfront revitalisation and transformative investment which will continue to be a shared role between these units. Together, both Tourism and the Economic Development Office can provide invaluable assistance to those looking to invest in the area.

Recommended Actions

- 7.8.1 Advocate for the implementation of enabling tourism infrastructure: Continue to advocate for major projects and precinct developments which have a significant tourism and other economic generation role.
- 7.8.2 Continue to develop and refine the tourism experience: Continue to work with tourism operators and those seeking to engage with the sector to develop and refine offerings, products and experiences that enriches visitation.





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7.9 Retail Trade

Retail trade is one of the biggest employers in the Shoalhaven, being second in number only to health and social services. Whilst the value of each of these jobs is comparatively low, the retail experience is one that closely relates to the overall experience of an area and contributes to liveability within the context of retail “shopping” increasingly being recognised as a social activity. Retail spaces and town centres also need to provide for and promote “experiences”, part of a place management or place making process as discussed in Section 6.4.

Retail is particularly important in the main Nowra CBD area, as well as the regional centres of Vincentia and Ulladulla - all of which are likely to undergo significant change over the period of this Strategy. In each case it is important that changes reinforce the retail structure and don't fragment efforts across these areas.

The retail sector also plays an important role in many villages - such as Berry, Kangaroo Valley, the Bay and Basin, Culburra, Sussex Inlet and Milton, which assists to retain heritage, promote the broader Shoalhaven and provide diversity to the localised retail offering.

Recommended Actions

- 7.9.1 Ensure an integrated and lively retail sector:
Continue to plan and advocate for integrated and lively place based retail sectors in the Nowra CBD and other centres that are attractive for residents, business and visitors.

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8. Key Partners and Leadership

Council, along with its key partners, has a leadership role in helping business and the broader economy to grow in a sustainable way that lays the long-term foundations for future generations. This will require a productive and cooperative partnership with many and varied stakeholders, which are outlined in this section.



8.1 Federal and State Governments

The economic future of the Shoalhaven rests with Council along with a whole range of key partners - including the Federal and State Governments through a range of policy, funding and programming measures. The policy environment facilitates the growth agenda, through State led initiatives such as implementation of Aboriginal economic development initiatives of the Regional Plan, changes to planning legislation, and Federally through areas like migration and human services.

The Federal and State Governments also have the means to allocate financial resources for infrastructure - the backbone for many economic opportunities. Council needs to continue its effective lobbying to secure ongoing infrastructure support for the area. These governments have also committed to several relevant programs such as the \$20 million South Coast Jobs and Skills package and the Jobs for NSW Regional Solutions programs.

Connection to government can be made directly or through agencies such as Regional Development Australia (RDA) Illawarra and RDA Far South Coast, as well as the Illawarra-Shoalhaven Joint Organisation and others. Direct connection to the regional offices of the Departments of Premier & Cabinet and Planning & Environment, NSW Industry and HMAS Albatross will also continue to be critical.

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8.2 Educational Institutions

Education and skills are a core component of a productive labour force and the connection between tertiary institutions, skills gaps and ongoing employment being critical. With fundamental change to the TAFE system, these connections have never been more apparent.

When combined with the University of Wollongong Shoalhaven Campus and other providers, the basis for a strong tertiary skills sector is ready and available. Continuing to work with these core institutions to provide support for niche needs across industry, professional and community development sectors will make a stronger and more resilient economy.

8.3 Working with other Councils

The context of local government service delivery is on the verge of significant change, with the introduction of regionally based Joint Organisations - to include Wollongong, Shellharbour, Kiama and Shoalhaven councils. Shoalhaven City Council look forward to working more co-operatively across the region, as well as building new partnerships with all neighbours and those where Council has a direct relationship on a project or sector basis.



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8.4 Local Industry

Over past years, a healthy number and range of business industry groups and networks have been established in the Shoalhaven, including:

- Shoalhaven Business Chamber and other local Chambers of Commerce;
- Shoalhaven Professional Business Association;
- Shoalhaven Business Forum; and
- Shoalhaven Defence Industry Group.

Local industry deliver the vast majority of jobs, innovation and capacity, and working closely with them provides the opportunity to best understand and assist their growth and to connect to existing or new businesses.

8.5 Community

First and foremost, the aim of this Strategy is to respond to the needs of the Shoalhaven community, both now and into the future. Council's overarching Community Strategic Plan identifies the balancing of growth and opportunity with the social, environmental and leadership values of our community.

This strategy focuses on delivering this, improving the community's quality of life by facilitating investment in key industry sectors, developing or supporting catalytic

opportunities and improving lifestyle opportunities which complement these.

Council will continue to work with the community, and through local industry groups, to ensure that economic development activities are well connected to current and future opportunities.



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9. Implementation and Monitoring

9.1 Measuring Success

The local economy is ever changing, and whilst we aim to predict and assist in its sustainable growth, there are always unknowns around the corner. Whilst keeping these broader unknowns in mind, the following broad-based measures have been identified to best match to the objectives of this Strategy and to provide measures of its success:

Objective 1: To grow in number of employed people within the Shoalhaven commensurate with population growth.
Measurable - 2016 baseline = 35,745 jobs / 99,740 population

Objective 2: To increase the level of Gross Regional Product per worker
Measurable - Baseline REMPLAN data, baseline 2016 = \$160,926 per job

Objective 3: To sustain, as far as possible, the level of workforce participation despite an aging population
Measurable - EDO data = 39.5% (2011)

Objective 4: To enhance the liveability of the Shoalhaven
Measurable - Baseline annual community survey - Place mean score July 2016 = 3.19

Reporting on these key measures over time will provide an indication of the effectiveness of the Strategy, enabling revision / review as required and as further discussed below.

9.2 Implementation Documents

Implementation of the Economic Development Strategy will be supported by three internal working documents which will be finalised for Council staff use following public exhibition of the Strategy. These documents are:

Implementation Action Plan

The Implementation Action Plan will consolidate the recommended actions outlined in this Strategy, providing a more detailed process for proposed implementation, including those that would be involved from an internal and external perspective.

Infrastructure Support Plan

The Infrastructure Support Plan will outline key infrastructure needs to enable the delivery of intended economic outcomes, including identification of infrastructure gaps, funding for which can be further explored over the period of the Strategy.

Business Attraction Plan

The Business Attraction Plan will provide details as to marketing and promotional recommendations over the next few years. The Plan will form a key deliverable of the Strategy in terms of attracting new external investment.



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9.3 Review and Revision

This Economic Development Strategy is designed as a 10 year plan, delivering short term actions leading to long-term opportunities. Whilst the document itself is unlikely to change over that time, implementation documents as outlined above, and the introduction or review of sector strategy documents over time will continue to refine and expand on the Economic Development Strategy's overarching objectives.



Background

Engagement with the citizens, and stakeholders in the City of Shoalhaven is an essential part of Council's commitment to open and transparent governance and civic leadership. Council's Community Consultation Policy sets out its commitment to effective community engagement.

The implementation of a specific Engagement Strategy is a key element in the process of reviewing the Shoalhaven Community Strategic Plan (CSP). The updated Strategic Plan will build on the previous CSP Shoalhaven 2023 and continue to provide the primary "vision" and strategic direction in Council's integrated planning and reporting framework. The framework will also reflect any changes to the Delivery Program, Operational Plan and Resourcing Strategies.

The Engagement Strategy aims to ensure that Council optimizes its engagement with the City's citizens and stakeholders in the preparation of the CSP. Community and stakeholder contributions will help to determine the final shape of the new Strategic Plan.

Council is ultimately responsible for the adoption of the CSP however the community have a valid role in recommending the priority areas for Council to target their resources and the CSP is seen as the Community's plan.

As is the case with any agency whether it is federal, state or local government there are a limited resources available, as well as certain legislative requirements which must be met. Council will consider this along with what is important to the local community when allocating resources as part of the preparation of the Delivery Program, Operational Plan and budget that support the CSP.

Scope:

This Community Engagement Strategy is intended to support the review of the Shoalhaven Community Strategic Plan, consistent with the provisions of the Local Government Act and associated Regulations and Division of Local Government Guidelines. It will direct Council's engagement and communication with Shoalhaven's citizens and stakeholders in the review of the Shoalhaven 2023 and related plans, strategies and programs.

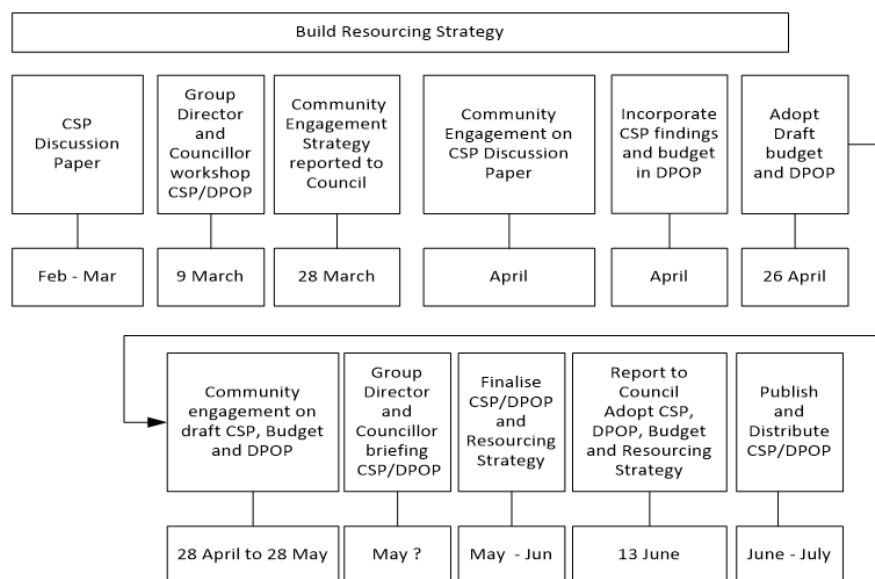
Purpose of the Engagement

This strategy will seek to:

- provide all parts of the community with the opportunity to be informed about and have the opportunity to be involved in the review of the Community Strategic Plan.
- utilise effective and innovative communication and community engagement methods to reach our stakeholders.
- ensure the Shoalhaven Community Strategic Plan reflects the long-term vision and priorities of the community.

- seek to engage with the “hard to reach” where possible to seek a wide range of community views.

Timeline



Stakeholders

There are a number of stakeholders that will need to be reached as part of this engagement process. These stakeholders are outlined in table 1 below.

Community Groups	Business	Individuals	Internal
CCBs	Chambers	Resident ratepayers	Council staff
Government agencies	Business Associations	Non-resident ratepayers	Section managers and Group Directors
Not for profits	Business Owners	Renters	Councillors
Sporting groups	Business Renters	People with Disability	Volunteers
Social and activity clubs	Tourism operators	Volunteers	Business Units
	Media	Youth	
		Aboriginal and Torres Strait Islanders	

Table 1: Stakeholders

Spectrum analysis:

The IAP2 community engagement spectrum provides guidance on the definition of the engagement being carried out and the outcome and goal to be achieved. This community engagement strategy sits within the consult level of the IAP2 Spectrum as shown in table 2 below. It is important for this to be clearly communicated to stakeholders to ensure that their expectations for the engagement do not rise above this level of engagement and that they understand the amount of involvement that they can have in the process and in the final decision making.

	Inform	Consult	Involve	Collaborate	Empower
Public Participation Goal	To provide the public with balanced and objective information to help them understand a problem, alternatives, opportunities and/or solutions.	To obtain public feedback on alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternative and identification of the preferred solution.	To place the final decision making in the hands of the public.
Public Participation Promise	We will keep you informed at significant stages of works and projects.	We will keep you informed, listen to you and acknowledge concerns and aspirations and provide feedback on how community input influenced the decision	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives and developed and provide feedback on how community input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Table 2 – IAP2 Spectrum

Communication Challenges

There are a number of communication challenges that may be faced throughout this community engagement process. These are outlined in table below.

Challenge Issue	Impact Implication	Overcoming the challenge
NSW School Holidays will occur during the community Engagement period. These take place between 8th April and 25 April, 2017.	This may effect community workshop attendance and overall engagement .	Provide opportunities for feedback before and after school holidays targeted at these stakeholders. Allow for additional time as part of DPOP/Budget process to allow for additional feedback to be received on this project

		Holidays may allow opportunity to engage with holiday makers and absentee landowners
The message used may not be engaging for the community and they may not wish to be involved. May be to high level for them to understand their role in the decision-making process and how the priorities affect their daily lives	The community does not engage in this project	At week 2 an evaluation will be carried out to analyse the reach of engagement and the level of feedback received. This will enable the message to be adjusted to ensure that it is targeted and effective and provides the justification for why the community should be involved in the process. Engagement methods proposed may also be evaluated to determine whether any adjustments need to be made.
Ability for the community to focus on higher level priorities without moving to the actions, budget and individual projects that they may wish to be completed as part of the CSP engagement	Feedback will cover many other issues other than the focus of the engagement and the feedback required is not received.	Provide the ability for this feedback to be captured, whilst explaining that this part of the engagement is focused on the priority level. Advise community that Budget and DPOP will be released for comment soon after CSP engagement and their feedback will be channelled into this process.
A response from IPART about whether they will support the proposed SRV may be received during the community engagement process.	Confusion within the community about how the SRV and other discussions around service provision relate to the CSP. The message about the CSP will be overshadowed by discussions about rates	Provide a link to the rates information as part of any online platform. Provide reference within the information packages on the CSP which advises where information about the rates proposal can be found on Councils website or via phoning Council to a request a hard copy.
Multiple engagements occurring at the same time	Lack of interest in this engagement Community confusion about the feedback they are providing Engagement fatigue	Clear messaging through each engagement process Coordination of approaches and timings Flexibility around the engagement methods and style to adjust and accommodate to any outside influences
Timing of the release of the DPOP and Budget	Confusion within the community	Clear explanation of process and purpose of each document. Flexibility and cross over of

	about which document and how they all fit together May not participate in one or the other of the processes	engagement processes to enable community to provide feedback on whole " suite of documents " as required
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Schedule of Engagement Activities

Phase 1- Planning and Research and other Community Engagement

Discussions have been occurring with the community about their priorities and the types of service provision that Council provides through a number of recent community engagements including the Merger proposal in 2016, Coastal management discussions in 2016 and the SRV 2016 and 2017. A community survey was conducted as part of the community consultation on the SRV in January 2017 on service levels and priorities. Council also conducts a community survey each year to measure the community's priorities and expectations as well as the performance of Council.

The results of each of these engagement processes were analysed and ten key priorities developed. These priorities reflect the outcomes of previous community engagement processes, Councillor workshops and internal staff workshops.

Phase 2 – Official Community Engagement Period

Focused community engagement will be carried out on the proposed community priorities. This is proposed to be undertaken for a four week period commencing the 1st April 2017. The purpose of this engagement will be to seek feedback on the proposed key priorities and determine which priority is the most important to the community.

Further comment on the actions that may be undertaken to meet the proposed priorities will then be discussed as part of the Budget and Delivery Plan and Operational Plan community engagement.

Phase 3 – Evaluation

The community feedback received from the community as part of Phase 2 engagement will be analysed and provided in a report to Council for consideration.

Methods

Week 1- 1st April to 7th April

Focus:

- To provide the community with information about the project through digital platforms
- To provide a broad range of the community with information about the CSP and advice about how they can get involved with the process and provide feedback

Key Messages:

- Have your say about the key priorities of the community and Council via multiple feedback options
- Council seeking your views on what should be the priorities for the next ten years

Key Stakeholders Reached:

- Youth
- CCBs
- Ratepayer
- Renter
- Home Owner
- Chambers
- Business Associations
- Business Owners
- Business Renters
- Leaders of Business
- Young Entrepreneurs
- Tourism operators
- Retailers
- People with Disability
- Volunteers

Activities

Date	Method	Feedback	Measure
April 1-8th April 2017	<ul style="list-style-type: none"> • Online Platform which includes information about: <ul style="list-style-type: none"> • CSP priorities, • discussion paper • engagement process • workshop times • opportunities to have your say • Article in the Rates Newsletter- Neighbourhood News distributed to all ratepayers • Hard copy information package distributed to all Council administration buildings and business units which will include Information on key priorities, reply 	Online survey	<p>No. of "interactions" on Get Involved website for that week, provided through weekly report</p> <p>Number of forms returned from newsletter</p> <p>Number of hard copy surveys filled out</p> <p>Facebook post reach and engagement</p> <p># news articles that appear in print and online</p> <p>#clicks on SCC webpage Media</p>

	<p>paid feedback form and Get Involved website details.</p> <ul style="list-style-type: none"> • CSP Information Pack provided to Council Committees, all chambers of commerce, CCBs and other community groups • Opportunity to win prize for completion of feedback campaign released • Article in In your neighbourhood EDM • Media release • Presentation to Aboriginal Advisory Committee • Social media campaign commences (6 weeks duration) including specific posts and clr videos • Invitations to workshops provided to all council committees, Clrs, CCBs, community groups, email databases and business chambers/groups (with incentive to attend) 	
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Week 2 – 8th April to 15th April

Focus: Key Messages:

Key Stakeholders Reached:

- Ratepayer
- Chambers
- Business Associations
- Business Owners
- Business Renters
- Leaders of Business
- Young Entrepreneurs
- Tourism operators
- Retailers
- Ratepayer
- Renter
- Home Owner
- People with Disability

- Volunteers

Date	Method	Feedback	Measure
7 th April- -	<ul style="list-style-type: none"> • Continuation of methods from week 1 • Bookmarks provided to all Council business units to be distributed to customers eg: bookmark given out for each book borrowed or provided with receipt when purchase made at SEC 	Online survey Relied paid form in rates newsletter Hard copy survey	No. of "interactions" on Get Involved website for that week, provided through weekly report

Week 3 -16th -22nd April

Focus: Seeking in depth community feedback about the proposed priorities via face to face methods

Key Messages

- Attend a workshop to provide face to face feedback to council and discuss the issues that are important to you.

Key Stakeholders

- Ratepayer
- Chambers
- Business Associations
- Business Owners
- Business Renters
- Leaders of Business
- Young Entrepreneurs
- Tourism operators
- Retailers
- Ratepayer
- Renter
- Home Owner
- People with Disability
- Volunteers

Date	Method	Feedback	Measure
	<ul style="list-style-type: none"> • Continue week 1 methods 	Face to face feedback as	# Participants in workshop

Date	Method	Feedback	Measure
	<ul style="list-style-type: none"> Follow up email/letter regarding information package to all committees, community groups, business chambers etc Community Workshops- 3x 1 hour workshops were participants from the community are asked to rank their CSP Priorities. Drop in one on one community feedback meeting using get involved site Indigenous Peer to Peer engagement – card sorting method 	part of a workshop	# of participants in drop in sessions

Week 4- 22nd – 29th April

Focus: Seeking in depth community feedback about the proposed priorities via face to face methods and reminding everyone to get involved in other feedback methods

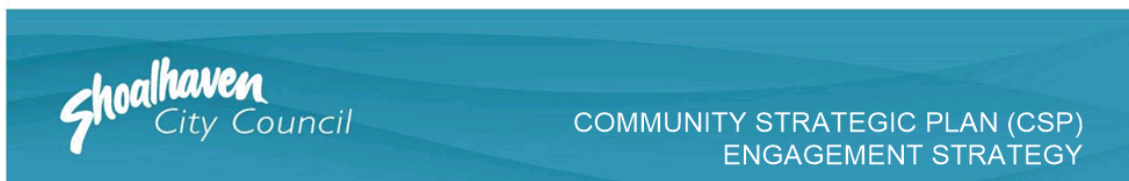
Key Messages

- Focused sessions will be held for certain community groups
- Get involved in last week of engagement

Key Stakeholders

- Ratepayer
- Community groups
- Aboriginal and Torres Strait Islanders
- Youth
- Volunteers

Date	Method	Feedback	Measure
	<ul style="list-style-type: none"> Continue week 1 methods Provide follow up email/letter to all attendees of community workshops Specific email reminder to CCBs 	Face to face feedback Hard copy survey	# Participants in workshop



Date	Method	Feedback	Measure
	<ul style="list-style-type: none"> Drop in one on one community feedback meeting using get involved site Youth Peer to Peer engagement – card sorting method Community survey at shopping centres 		# of participants in drop in sessions

Scope of works has been agreed by:

Signed: _____
 Name: XXX (Text input)
 Position: XXX (Text input)
 Date: 23/03/2017

CL17.73 - Attachment 2



Monthly Report

Shoalhaven City Council

February 2017

CL17.78 - Attachment 1



Market

We refer to our more detailed *Economic Commentary* for the month.

International Markets

President Trump promoted planned tax reforms and infrastructure, and the Dow Jones ended on a new high of 21,115 (the equal quickest thousand, 24 days after Dow 20,000), finishing the month +5.17%. The MSCI World ex-AUS gained +3.12%.

US 10-year yields finished -9bp lower at 2.36%; while interest rates should rise in March after being unchanged in February, the future path is unclear and investors believe little stimulus will occur in 2017. Australian bonds were flat.

Domestic

The ASX200 finished +2.25% higher, despite struggling energy and banking sectors.

The RBA left the cash rate unchanged in February on a positive outlook on both global and domestic economies. They expect +3% GDP in 2017, and non-residential construction to contribute from 2018. However, data remains weak locally. Retail trade fell -0.1% in December; building approvals fell -1.2% to be -11.4% YoY.

Unemployment fell to 5.7% (-0.1%) with +13,500 jobs in January, disguising full-time employment plunging -44,800. The Fair Work Commission announced a controversial cut to Sunday penalty rates for hospitality, retail and fast food sectors.

The current account deficit narrowed 62% in Q4 to -\$3.8bn, after a record surplus on good and services of +\$4.7bn. Net foreign debt eased 2% but remained just above \$A1tr. BHP's profit soared to \$3.24bn in 2H compared to \$412m a year earlier and corporate profits gained +8.4% in Q4. But private investment dived another -2.1% in Q4 (mostly in construction) to be -25.5% YoY.

Other Markets

Trump confirmed that the US will respect the 'One China' policy, while meeting with the Japanese PM seeking a "fairer" trade model. The mantra "Repeal and replace Obamacare" has eased fears of a sudden loss of the safety net. Reforms are proving "complicated."

US GDP growth slowed to a trend +1.9% in Q4 (from a one-off +3.5% in Q3) on a large reduction in exports. US Consumer spending grew in Q4 at +2.5%. US CPI rose +2.5% to January 2017. Core CPI remains above the Fed target, and at post-GFC highs. US unemployment rose to 4.8% in January 2017 (+0.1%), above market expectations.

New single-family house sales fell -10.4% to 536,000 in December 2016, below market expectations of a 1% drop. Higher mortgage rates may be hitting buyers.

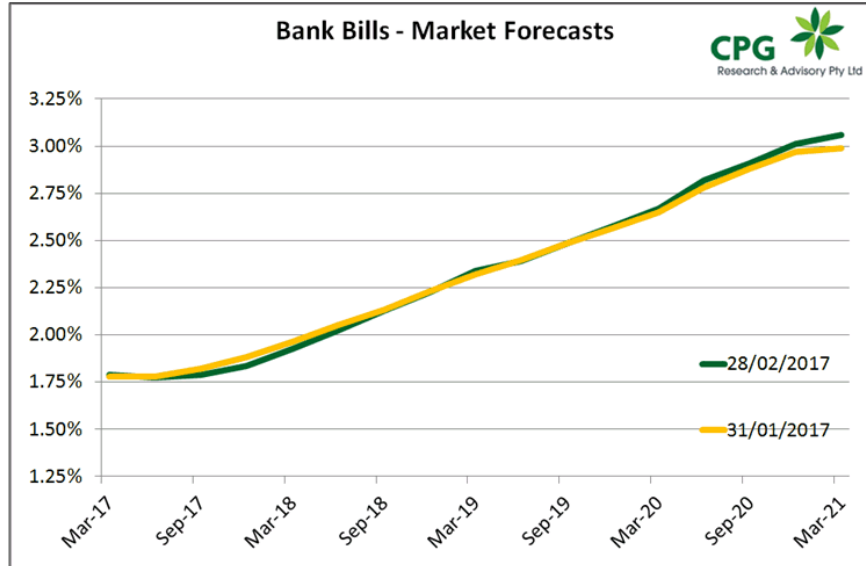
Eurozone consumer confidence fell to -6.2 in February, from -4.8 in January. Despite the decline, consumer confidence remains well above its long-term average.

The Philippines' crackdown on miners' environmental compliance is hitting several ASX-listed companies. Arrests of political figures continue to worry foreign observers.

WTI oil finished higher at \$54.01/bbl (+2.3%), as did Gold at US\$1257 (+4.0%). Iron Ore continued to soar, finishing at \$87.30 (+6.2%). Industrial metals were generally higher, and the \$A gained +1.6% vs a weaker \$US.



Bill futures were little changed across the curve.



Credit Market

Credit spreads narrowed again in February, following other risk assets firmer. Australia rallied, tightening 8bp. Europe and North America were 1bp and 4bp tighter respectively.

The “Trump rally” continued on proposed tax reform and other policy measures - the US stockmarket hit record highs and the Dow Jones closed above 21,000 with other indices also rising strongly in the month.

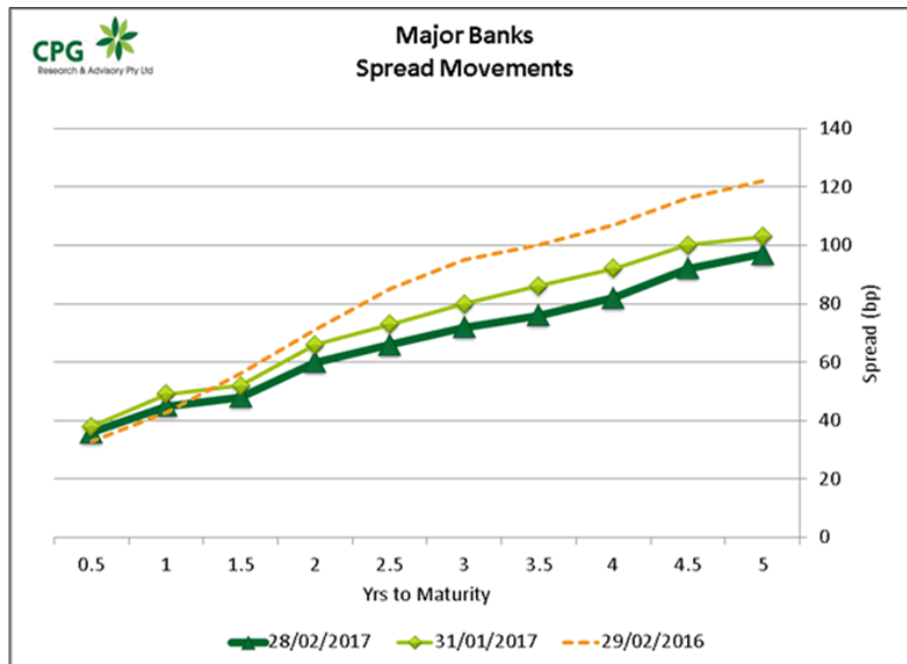
The physical High Yield bond index tightened another ¼% during the month, and is now approaching post-GFC tight. Many credit assets are very fully priced. The Australian bond market has tended to lag offshore trends.

Credit Indices	28 Feb 17	31 Jan 17	29 Feb 16
iTraxx Australia 5 Yr CDS	84bp	93bp	157bp
iTraxx European 5 Yr CDS	73bp	74bp	99bp
CDX North American 5 Yr CDS	62bp	66bp	108bp

Source: MarkIt

In the physical market, senior spreads tightened up to 10bp in the 3-4 year part of the curve. This was partly attributed to a new issuance by ANZ at +100bp in late February, which was well received by the market. Other issues such as hybrids have also been oversubscribed and have therefore traded well in aftermarket trading.

Strong stockmarket conditions have buoyed most credit sectors, and spreads have gradually contracted since a year ago.



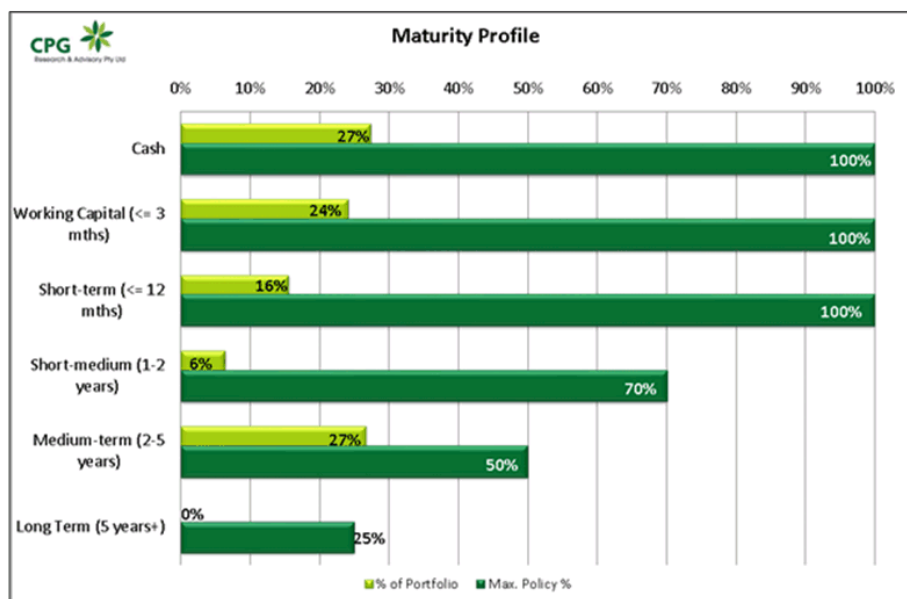
Council's Portfolio

The portfolio has 27% of investments available at-call (after the recent large deposit into the TCorpIM Cash Fund) and a further 24% of assets maturing within 3 months.

Additional short-dated funds have been gradually redeployed into a portfolio now well diversified by term – ahead of what has been a considerable decline in deposit rates.

Approximately 27% of the portfolio is now in medium-term assets, with capacity now freed up after previously being close to the maximum limits.

We currently recommend that this be deployed to a mixture of fixed deposits and new FRN issues as they are launched.



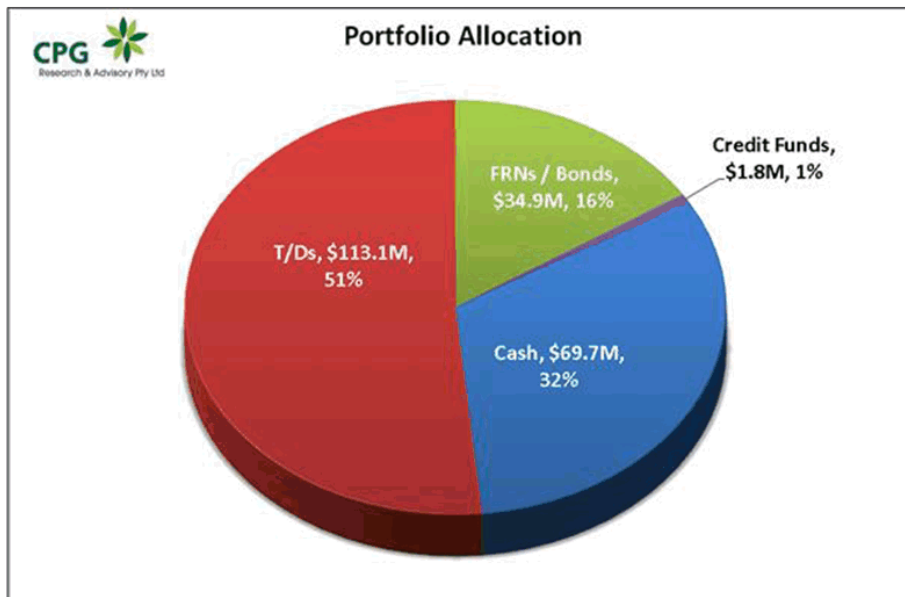
Council's portfolio is dominated by term deposits across a broad range of counterparties; credit assets are around 16% of the portfolio. Council's longer-dated investments from 2014 are now well above market returns, through significantly extending duration.

The spike in yields created a much steeper curve and rates that more clearly reward for the likely interest rate outlook. Conversely, FRN spreads have been tightening, generating capital gains.

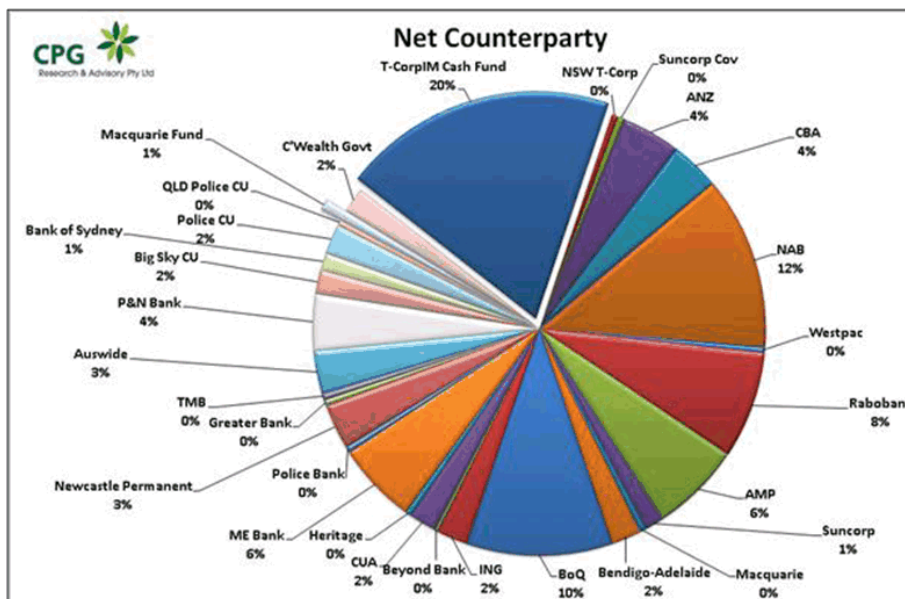
We acknowledge the increasing uncertainty around interest rates – a sustained commodity boom could bring forward rate increases; a rapid retracement of 2016's commodity price gains would conversely place pressure on the RBA to address very low headline inflation.

Currently we see value in both longer deposits and FRNs. At the long end, rates have risen ½% from their lows for a 5 year deposit. FRNs also offer solid initial yields with the prospect of additional gains. **We have a positive view on increasing the Medium Term allocation in either major category.**

Council's portfolio is dominated by term deposits across a broad range of counterparties and fixed interest asset types.



The investment portfolio is well diversified in complying assets across the entire credit spectrum, with the major banks and Rabobank dominant:





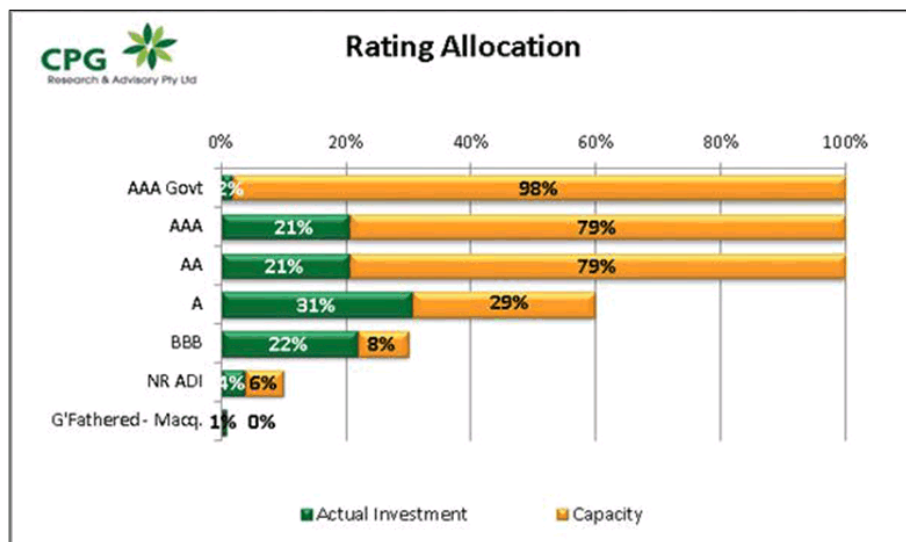
Credit Quality

The portfolio is diversified from a rating perspective. Credit quality is diversified and is predominately invested amongst the investment grade ADIs (BBB- or higher), with a smaller allocation to unrated ADIs.

Only the Macquarie credit fund is now classified as a “Grandfathered” legacy asset.

There is still high capacity to invest across the higher rated counterparties (“A” or higher).

Rating Category	Actual	Per C/Party	Aggregate	Rating Category	Actual Investment	Capacity
AAA Govt	2%	100%	100%	AAA Govt	2%	98%
AAA	21%	40%	100%	AAA	21%	79%
AA	21%	30%	100%	AA	21%	79%
A	31%	15%	60%	A	31%	29%
BBB	22%	10%	30%	BBB	22%	8%
NR ADI	4%	5%	10%	NR ADI	4%	6%
G'Fathered - Macq.	1%	1%	1%	G'Fathered - Macq.	1%	0%



All of these are well within Policy limits.

From time to time, broker specials continue to be offered with some BBB rated and unrated Credit Unions paying an additional premium above leading direct rates – **pricing is generally quite favourable, but often for short terms and/or restricted in parcel size**. Smaller institutions are also more inclined to publish “good until filled” orders, rather than publishing a rate for the day. This is covered in the daily emails and our advice at the time of investment.



Compliance

We have tested the portfolio provided against Council's current investment policy and report the following:

Individual counterparty exposures comply with the Policy.

Counterparties	Exposure \$M	FCS	Net	Rating	Policy Limit	Actual	Capacity
T-CorpIM Cash Fund	\$43.11M	\$0.00M	\$43.11M	AAA	40%	20%	\$44.65M
NSW T-Corp	\$1.03M	\$0.00M	\$1.03M	AAA	40%	0%	\$86.74M
Suncorp Cov	\$1.00M	\$0.00M	\$1.00M	AAA	40%	0%	\$86.76M
ANZ	\$9.60M	\$0.25M	\$9.35M	AA-	30%	4%	\$56.47M
CBA	\$8.00M	\$0.25M	\$7.75M	AA-	30%	4%	\$58.07M
NAB	\$27.33M	\$0.25M	\$27.08M	AA-	30%	12%	\$38.74M
Westpac	\$1.00M	\$0.00M	\$1.00M	AA-	30%	0%	\$64.82M
Rabobank	\$17.00M	\$0.25M	\$16.75M	A+	15%	8%	\$16.16M
AMP	\$14.42M	\$0.25M	\$14.17M	A+	15%	6%	\$18.74M
Suncorp	\$3.00M	\$0.00M	\$3.00M	A+	15%	1%	\$29.91M
Macquarie	\$1.00M	\$0.00M	\$1.00M	A	15%	0%	\$31.91M
Bendigo-Adelaide	\$5.00M	\$0.25M	\$4.75M	A-	15%	2%	\$28.16M
BoQ	\$23.00M	\$0.25M	\$22.75M	A-	15%	10%	\$10.16M
ING	\$5.00M	\$0.25M	\$4.75M	A-	15%	2%	\$28.16M
Beyond Bank	\$0.90M	\$0.25M	\$0.65M	BBB+	10%	0%	\$21.29M
CUA	\$4.25M	\$0.00M	\$4.25M	BBB+	10%	2%	\$17.69M
Heritage	\$1.00M	\$0.00M	\$1.00M	BBB+	10%	0%	\$20.94M
ME Bank	\$13.00M	\$0.25M	\$12.75M	BBB+	10%	6%	\$9.19M
Police Bank	\$1.00M	\$0.00M	\$1.00M	BBB+	5%	0%	\$9.97M
Newcastle Permanent	\$7.00M	\$0.00M	\$7.00M	BBB+	10%	3%	\$14.94M
Greater Bank	\$1.00M	\$0.00M	\$1.00M	BBB+	10%	0%	\$20.94M
TMB	\$1.00M	\$0.00M	\$1.00M	BBB+	10%	0%	\$20.94M
Auswide	\$7.00M	\$0.25M	\$6.75M	BBB	10%	3%	\$15.19M
P&N Bank	\$9.00M	\$0.25M	\$8.75M	BBB	10%	4%	\$13.19M
MyState	\$0.00M	\$0.00M	\$0.00M	BBB	10%	0%	\$21.94M
Big Sky CU	\$4.00M	\$0.25M	\$3.75M	BBB	10%	2%	\$18.19M
Bank of Sydney	\$3.00M	\$0.25M	\$2.75M	NR	5%	1%	\$8.22M
Australian Military Bank	\$0.00M	\$0.00M	\$0.00M	NR	5%	0%	\$10.97M
Police CU	\$5.00M	\$0.25M	\$4.75M	NR	5%	2%	\$6.22M
QLD Police CU	\$1.00M	\$0.25M	\$0.75M	NR	5%	0%	\$10.22M
Macquarie Fund	\$1.77M	\$0.00M	\$1.77M	NR	1%	1%	\$0.00M
	\$219.41M		\$215.41M			98%	
C'wealth Govt		\$4.0M	\$4.00M	AAA	100%	2%	
Total	\$219.41M		\$219.41M			100%	
Check	\$0.00M		\$0.00M				

Subsidiaries such as Rural Bank are grouped in the exposures of the parent (Bendigo-Adelaide Bank, rated A-).



Returns - Accrual

Actual	1 month	3 months	6 months	FYTD	1 year	2 years	3 years	4 years
Official Cash Rate	0.11%	0.37%	0.74%	1.02%	1.65%	1.85%	2.06%	2.20%
Avg. 3m BBSW	0.14%	0.44%	0.87%	1.18%	1.90%	2.06%	2.26%	2.38%
AusBond Bank Bill Index	0.13%	0.44%	0.87%	1.22%	1.98%	2.12%	2.32%	2.44%
Council Cash	0.19%	0.53%	1.06%	1.43%	2.25%	2.46%	2.68%	2.74%
Council T/Ds	0.26%	0.85%	1.72%	2.33%	3.58%	3.70%	3.79%	3.85%
Council FRNs / Bonds	0.23%	0.72%	1.49%	2.02%	3.18%	3.34%	-	-
Council Credit Funds	0.43%	1.70%	1.68%	3.72%	5.73%	2.59%	2.92%	3.87%
Council Total Portfolio	0.23%	0.77%	1.56%	2.14%	3.32%	3.44%	3.58%	3.70%
Annualised	1 month	3 months	6 months	FYTD	1 year	2 years	3 years	4 years
Official Cash Rate	1.50%	1.50%	1.50%	1.53%	1.65%	1.85%	2.06%	2.20%
Avg. 3m BBSW	1.78%	1.78%	1.78%	1.78%	1.90%	2.06%	2.26%	2.38%
AusBond Bank Bill Index	1.77%	1.78%	1.77%	1.83%	1.98%	2.12%	2.32%	2.44%
Council Cash	2.47%	2.26%	2.15%	2.15%	2.25%	2.46%	2.68%	2.74%
Council T/Ds	3.47%	3.48%	3.49%	3.52%	3.58%	3.70%	3.79%	3.85%
Council FRNs / Bonds	2.98%	2.97%	3.03%	3.05%	3.18%	3.34%	-	-
Council Credit Funds	5.81%	7.07%	3.42%	5.64%	5.73%	2.59%	2.92%	3.87%
Council Total Portfolio	3.10%	3.16%	3.16%	3.22%	3.32%	3.44%	3.58%	3.70%

The investment portfolio had a solid month, **returning +3.10% p.a. annualised**, outperforming the AusBond Bank Bill Index¹ which returned +1.77% p.a.

The Macquarie Fund had another solid month, returning +0.43% (net actual). Despite some volatility over the past 24 months, the fund is **now above benchmark across all investment horizons**, and pleasingly, a strong performing asset over the longer-term (Council's best performing asset over 4 years but also a standout performer over 1 year).

Council's returns, while lower in absolute terms than historically the case, remains very strong compared to short deposits now rolling in the mid 2%'s.

The portfolio's performance continues to be anchored by the longer-dated deposits invested above 4%. FRNs, purchased at attractive margins, have also contributed positively to overall performance.

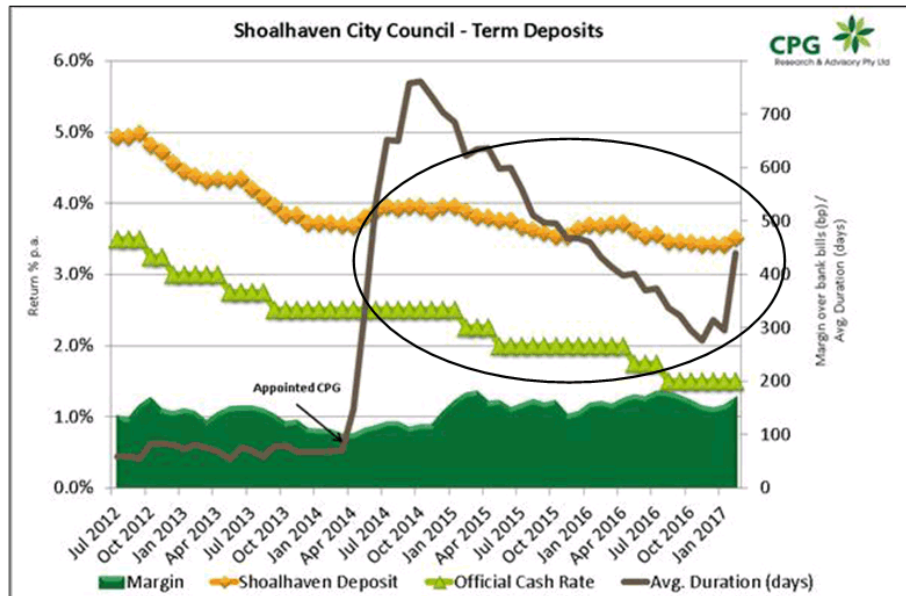
Cash drag has been partially mitigated through the switch into higher yielding accounts (requiring notice in return for the additional yield – they are not a substitute for at-call money).

¹ Previously UBS Bank Bill Index.



Term Deposits

At month-end, deposits accounted for approximately 52% of the total investment portfolio. The weighted average duration of the deposit portfolio stood at approximately **1.2 years (having peaked at around 2 years)** – both the initial major lengthening, and the subsequent run-down, have been well timed.



Duration management produced a measurable uplift in yield (circled) at a time when deposit rates have plunged, and cushioned the RBA's rate cutting cycle. It will provide good protection to Council's budgeted income for the remainder of FY17.

An average yield of **3.51% p.a.** (up 10bp from the previous month) **remains above the highest 3 year deposit in today's market, although 5 year rates are again accretive to overall returns.** Deposit yields today remain close to when CPG was appointed – *despite 4 rate cuts in the past two years.*

At the top end, the highest 5 year rate has risen by around 50bp over the past two months to be above 3¼%.

During the month, seven deposits matured. One was reinvested for 5 months while another two deposits were invested for 5 years at 3.74%-3.80% p.a. with P&N Bank and BoQ. These two latter deposits have been the major driver of increased deposit duration. We expect that they are likely to outperform in the out-years on the current expectations of a low rate environment. **We continue to encourage Council to lengthen deposits as the opportunity arises,** although not to the exclusion of other classes.

Relevant portfolio data follows:



Term Deposit Statistics

Percentage of total portfolio	52%
Weighted Average Yield	3.51%
Weighted Average Duration	1.2 yrs

Credit Quality of Deposits

AAA^	1%
AA	20%
A	38%
BBB	33%
Unrated ADI	8%
Total	100%

^ Calculation excludes the Financial Claims Scheme (FCS)

Across the longer-end of the curve, **the highest 4 year fixed deposit margin is around +120bp over bank bills**. The highest 5 year margin is slightly lower, at around +110bp over bank bills.

Absolute levels in the long-end of the curve have risen with the rise in the bond market since the Q3 2016. **This has seen the deposit curve steepen sharply** over the past few months and investors are rewarded for illiquidity, with some medium-term durations factoring in significantly more upside risk than we build into cash rate scenarios. **We recommend medium-term T/Ds at current levels, after a period of a “Neutral” view.**

Some above market rates (“specials”) continue to be offered by the “BBB” and unrated ADIs, often through the broker intermediaries.

We refer to the detailed analysis in our *February Fixed Interest Analytics*. It is important to note the increased uncertainty – with both high commodity prices and ultra-low inflation (especially in wages), the RBA’s path is less clear and **there are increasingly risks to a purely fixed interest strategy.**



Fixed Bonds & FRNs

The long-end of the curve amongst the wholesale senior bank FRNs tightened by up to +10bp during February, continuing a year-long recovery in credit.

They have continued to tighten into the first week of March.

Overall, spreads appear near mid-range when assessed against the post-GFC trading range.

Compared to the wides of a year earlier, the latest new issues have been around ¼% tighter.

Apart from providing diversification and additional liquidity in a portfolio, an FRN strategy has generated excellent returns over the previous year. Issue yields have fluctuated, but the tightening towards maturity has worked consistently.

Primary issues continue to be favoured over secondary market offers in the wholesale market. CBA and Westpac issued 5-year paper this year at +111bp, which has tightened to around +95bp in the secondary market. ANZ issued at +100bp in late February, taking advantage of the tighter conditions.

This is currently the likely level where a new major bank FRN would be issued.

For new issues, the regional ADIs (rated A or BBB) naturally offer a higher spread compared to the major banks due to their lower credit rating. Our FRN analytics suggest that the respective curves are relatively fair, with higher spread but greater difficulty extracting capital gains from regional bank FRNs. However, again the new issue discount provides additional value to investors.

Private placement FRNs or secondary market ‘taps’ can sometimes be offered, usually at a premium yield to the wholesale secondary market although we note they are generally less liquid due to their smaller issue sizes and daily turnover. The most recent example was a new 3 year FRN at +145bp (\$30m printed in total) from Greater Bank (BBB+) in mid February.

Heritage retail trade in a volatile range, but **at time of writing are extremely cheap**. With around 3 months to run, brokerage knocks 10-15bp out of the return, with the bigger problem being to secure volume without unduly moving a lightly traded security. At current levels, we suggest investors buy as a higher risk-return current asset, although it is **better suited to existing holders** given the risk of being left with a small parcel if an order only partly fills. The security has swung wildly in both directions recently, on low volume, particularly during its “ex-interest” period.

The late 2019 major bank FRNs are candidates for a switch opportunity over coming months. **This includes the \$2M ANZ Nov 2019 FRN, which we now suggest switching into other new issues.**

We recommend that Council retains the remainder of its FRN portfolio at this stage, and add to it in combination with longer deposits.



Other Credit

The Macquarie Global Income Opportunities Fund returned +0.43% (net actual) in February, strongly outperforming the AusBond Bank Bill Index return of +0.13%.

The underlying valuations of the Fund's holdings of domestic and offshore credit rose again this month, as global credit markets benefitted from the ongoing optimism surrounding US President Trump's stimulatory policies and proposed deregulation.

Despite a volatile and difficult environment for credit over the past year, it has performed well over the longer-term, as evidenced by its **4 year return of +3.87% p.a. and making the Credit sector Council's strongest asset class over this period.**

The Fund continues to hold a diverse range of securities across the global credit market. The manager has maintained modest credit hedges, seeking to minimise the effect of volatility on the Fund. Any spread contraction going forward allows credit and asset-backed holdings to enjoy significant capital gains. These have reduced returns but also significantly reduced risk.

Macquarie has performed strongly over the longer-term and the manager feels they are well positioned going forward. We regard Macquarie's credit team as having strong research capabilities and a proven defensive style outperforming peers in down markets. At times, the fund has sacrificed some upside to protect against extreme events.

We are pleased to see a better upside capture during the strong markets of Q2 and to a lesser extent Q3.

Given the solid running yield of the Fund at ~3½% p.a., and the additional liquidity it provides, we recommend Council retain this Fund. (Its performance relative to index and to peers is covered in our monthly *Performance Survey*).

We note that 2017 is likely to have less supportive macro conditions than 2016.



Fixed Interest Market Background

Investor sentiment strengthened, with the major US stockmarket indices setting new record highs and the Dow breaking 21,000 at month end on planned stimulatory policies. And the market pricing for a March rate hike in the US firmed, with the Fed fund futures now pricing in around 95% chance.

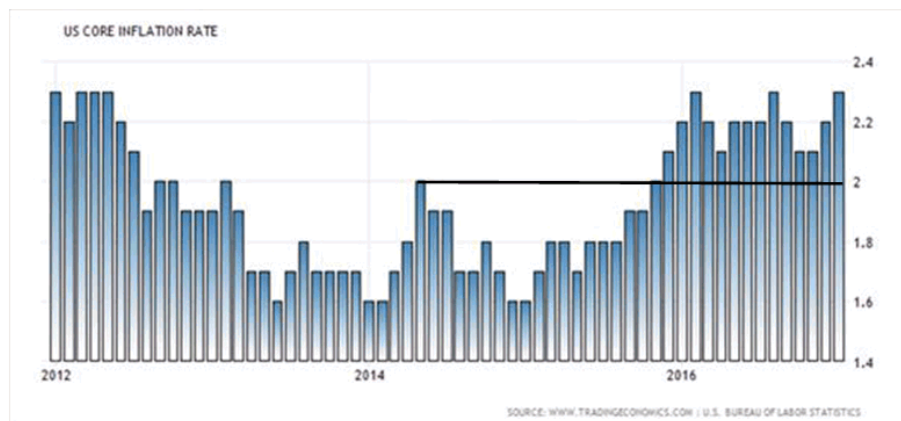
Fed Chair Yellen said

"At our meeting later this month, the committee will evaluate whether employment and inflation are continuing to evolve in line with our expectations, in which case a further adjustment of the federal funds rate would likely be appropriate."

She added that *"the process of scaling back accommodation likely will not be as slow as it was in 2015 and 2016."*

The Fed squeezed out just one 25bp rate increase in the previous two years, but is saying *"This time we really mean it."* Perhaps they do, but it would be easier to believe them if their actual economic forecasts told the same story. The economy grew at just 1.9% in Q4, and is projected to grow at the same feeble trend in each of the next three years, and long-term.

Still, inflation is pushing well through their target:



Still, none of this stopped bonds gaining ground. US 10-year bonds tightened by 9bp in the month, and the global bond index gained almost 1% in \$A (hedged). Bonds had looked oversold after the US election, and investors are struggling to see a catalyst in 2017 that would warrant the aggressive monetary policy Yellen speaks of.

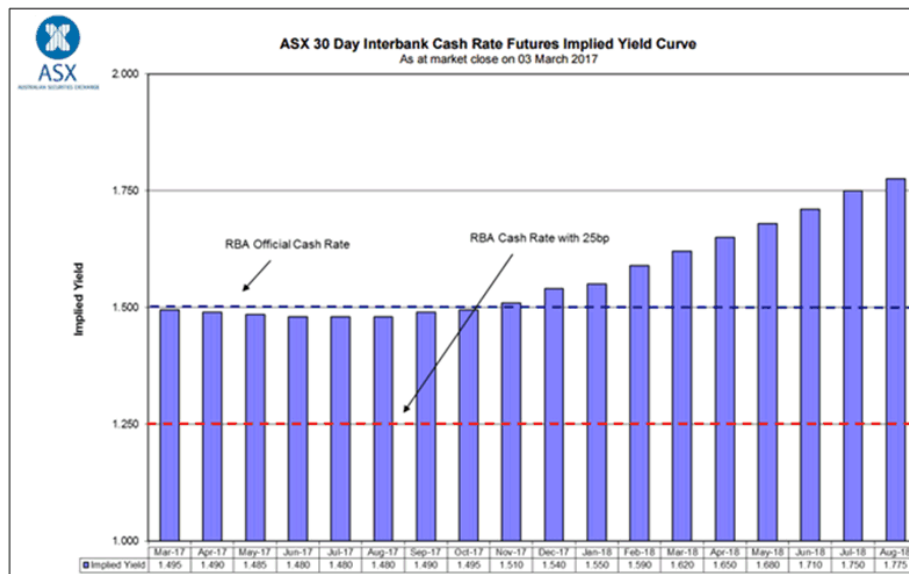
If the Fed really is that set on taking on inflation, the RBA will come under pressure as the Fed rate passes the RBA Official Cash Rate some time late in 2017. (Although the RBA may well be pleased at the pressure such a crossover would place on the \$A.)

Meanwhile, the RBA continued with its broadly upbeat commentary in the minutes of the RBA meeting in February despite the awful GDP figures. There were no new developments to add after the *Statement on Monetary Policy* released earlier in the month – they repeated expectations that growth will pick up to a pace *above potential* and that inflation will also pick up.



The RBA certainly cannot ease in a housing and commodity boom. Domestic gross domestic product (GDP) rose by +1.1% in the December quarter of 2016. It was a sharp bounce back after -0.5% in the September quarter. The Australian economy has now notched 102 consecutive quarters without recession (25½ years) and will tie the Netherlands' world record in Q1. Despite the world's oldest economic cycle and several commodity booms, Australia is nowhere near full employment and has the lowest wage pressure ever recorded.

The market thinks disinflation will enable the RBA to hold through a year of stronger commodity prices, tightening slowly thereafter. **And indeed our base case scenario is for the RBA to remain on hold over 2017.**



Source: SFE / ASX

Beyond that, **the upside threat is that the US really does attack inflation** (ignoring low growth) OR Trump ignites economic activity with an early stimulus. **To the downside, a construction slump and fall in property prices** (due to APRA and the banks inflicting a credit crunch) coincides with the end of the commodity cycle and a 2018 slowdown that prevents rate increases.



Portfolio Listing

Shoalhaven City Council as at 28/02/2017							
Authorised Deposit-Taking Institution (ADI)	ST Rating	Security Type	Principal/ Current MF Value	Term	Interest Rate	Maturity Date	
ANZ	A1+	FRN	\$2,000,000.00	1826	2.62%	11-Nov-19	
ANZ	A1+	FRN	\$1,600,000.00	1827	2.60%	17-Apr-20	
ANZ	A1+	FRN	\$1,000,000.00	1826	2.91%	16-Aug-21	
Bank of Qld	A2	FRN	\$1,000,000.00	1826	3.26%	18-May-21	
Bank of Qld	A2	FRN	\$1,000,000.00	1461	2.94%	26-Oct-20	
Bank of Qld	A2	FRN	\$1,000,000.00	1826	2.84%	6-Nov-19	
Bendigo Bank	A2	FRN	\$1,000,000.00	1827	2.88%	18-Aug-20	
Bendigo Bank	A2	FRN	\$1,000,000.00	1826	2.72%	17-Sep-19	
Commonwealth Bank Australia	A1+	FRN	\$1,000,000.00	1827	2.68%	17-Jul-20	
Commonwealth Bank Australia	A1+	FRN	\$1,000,000.00	1826	2.99%	12-Jul-21	
Credit Union Australia	A2	FRN	\$2,000,000.00	1187	3.00%	22-Dec-17	
Credit Union Australia	A2	FRN	\$2,250,000.00	1096	3.09%	20-Mar-17	
Greater Bank Limited	A2	FRN	\$1,000,000.00	1095	3.37%	7-Jun-19	
Heritage Bank	A3	FRN	\$1,000,000.00	1096	2.92%	7-May-18	
Macquarie Bank	A1	FRN	\$1,000,000.00	1096	2.82%	26-Oct-18	
Members Equity Bank	A2	FRN	\$1,000,000.00	1461	3.08%	17-Apr-18	
National Australia Bank	A1+	FRN	\$1,000,000.00	1826	2.95%	12-May-21	
National Australia Bank	A1+	FRN	\$2,000,000.00	1827	2.57%	3-Jun-20	
Newcastle Permanent Building Society	A2	FRN	\$1,000,000.00	1095	3.00%	22-Mar-19	
Newcastle Permanent Building Society	A2	FRN	\$2,000,000.00	1827	3.13%	7-Apr-20	
Police Bank	NR	FRN	\$1,000,000.00	1096	2.88%	21-Aug-17	
Rabobank	A1+	FRN	\$1,000,000.00	1826	3.27%	4-Mar-21	
Suncorp Metway Ltd Bank	A1	FRN	\$1,000,000.00	1826	2.90%	22-Jun-21	
Suncorp Metway Ltd Bank	A1	FRN	\$2,000,000.00	1827	3.03%	20-Oct-20	
Suncorp Metway Ltd Bank	A1	FRN	\$1,000,000.00	1826	2.72%	20-Aug-19	
Teachers Mutual Bank Limited	A3	FRN	\$1,000,000.00	1095	3.17%	28-Oct-19	
Westpac Bank	A1+	FRN	\$1,000,000.00	1827	2.24%	28-Jul-20	
ANZ	A1+	TD	\$4,000,000.00	1462	4.15%	27-Jun-18	
ANZ	A1+	TD	\$1,000,000.00	1099	4.01%	3-Jul-17	
Auswide Bank	A2	TD	\$1,000,000.00	1096	3.15%	8-Apr-18	
Auswide Bank	A2	TD	\$2,000,000.00	265	2.90%	24-May-17	
Auswide Bank	A2	TD	\$4,000,000.00	132	2.80%	12-Apr-17	
Bank of Qld	A2	TD	\$2,000,000.00	1462	4.10%	3-Sep-18	
Bank of Qld	A2	TD	\$2,000,000.00	1827	4.75%	1-May-19	
Bank of Qld	A2	TD	\$2,000,000.00	231	2.72%	12-Apr-17	
Bank of Qld	A2	TD	\$2,000,000.00	1821	3.85%	15-Dec-21	
Bank of Qld	A2	TD	\$4,000,000.00	222	2.80%	29-Mar-17	
Bank of Qld	A2	TD	\$2,000,000.00	208	2.80%	15-Mar-17	
Bank of Qld	A2	TD	\$5,000,000.00	1827	3.80%	21-Feb-22	
Bank of Qld	A2	TD	\$1,000,000.00	1096	4.20%	9-May-17	
Bank of Sydney	NR	TD	\$3,000,000.00	161	2.75%	26-Jul-17	
Bendigo Bank	A2	TD	\$1,000,000.00	1097	4.05%	5-Jun-17	
Bendigo Bank	A2	TD	\$2,000,000.00	1099	4.15%	17-May-17	
Beyond Bank Australia	A2	TD	\$900,000.00	731	3.45%	3-Mar-17	
Big Sky Building Society	NR	TD	\$2,000,000.00	733	3.30%	7-Mar-17	
Big Sky Building Society	NR	TD	\$2,000,000.00	146	2.80%	26-Apr-17	
Commonwealth Bank Australia	A1+	TD	\$1,000,000.00	1104	4.05%	24-Jul-17	
Commonwealth Bank Australia	A1+	TD	\$1,000,000.00	1104	4.05%	17-Jul-17	
Commonwealth Bank Australia	A1+	TD	\$500,000.00	1105	4.05%	5-Jul-17	
Commonwealth Bank Australia	A1+	TD	\$500,000.00	1106	4.05%	6-Jul-17	
Commonwealth Bank Australia	A1+	TD	\$1,000,000.00	1097	4.05%	10-Jul-17	
Commonwealth Bank Australia	A1+	TD	\$1,000,000.00	1097	4.05%	17-Jul-17	
Commonwealth Bank Australia	A1+	TD	\$500,000.00	1097	4.05%	27-Jun-17	
Commonwealth Bank Australia	A1+	TD	\$500,000.00	1099	4.05%	29-Jun-17	
ING Bank (Australia) Ltd	A2	TD	\$2,000,000.00	181	2.80%	31-Jul-17	
ING Bank (Australia) Ltd	A2	TD	\$3,000,000.00	190	2.80%	28-Jun-17	
Members Equity Bank	A2	TD	\$2,000,000.00	1099	4.00%	27-Jul-17	
Members Equity Bank	A2	TD	\$2,000,000.00	1827	4.66%	29-May-19	
Members Equity Bank	A2	TD	\$1,000,000.00	1096	4.25%	9-May-17	
Members Equity Bank	A2	TD	\$2,000,000.00	140	2.75%	12-Apr-17	
Members Equity Bank	A2	TD	\$2,000,000.00	125	2.77%	22-Mar-17	
Members Equity Bank	A2	TD	\$3,000,000.00	119	2.75%	22-Mar-17	



Shoalhaven City Council as at 28/02/2017						
Authorised Deposit-Taking Institution (ADI)	ST Rating	Security Type	Principal/ Current MF Value	Term	Interest Rate	Maturity Date
National Australia Bank	A1+	TD	\$75,000.00	365	2.55%	23-Dec-17
National Australia Bank	A1+	TD	\$100,408.07	365	2.94%	30-Jun-17
National Australia Bank	A1+	TD	\$2,000,000.00	1822	4.11%	29-Aug-19
National Australia Bank	A1+	TD	\$1,000,000.00	1097	4.05%	5-Jun-17
National Australia Bank	A1+	TD	\$2,000,000.00	253	2.80%	26-Apr-17
National Australia Bank	A1+	TD	\$2,000,000.00	281	2.81%	24-May-17
National Australia Bank	A1+	TD	\$2,000,000.00	146	2.75%	26-Apr-17
National Australia Bank	A1+	TD	\$3,000,000.00	112	2.74%	15-Mar-17
Newcastle Permanent Building Society	A2	TD	\$2,000,000.00	190	2.75%	28-Jun-17
Newcastle Permanent Building Society	A2	TD	\$2,000,000.00	1091	3.20%	22-May-19
NSW Treasury Corp	A1+	TD	\$1,026,000.00	365	2.72%	4-Oct-17
Police and Nurses Bank	A2	TD	\$2,000,000.00	1096	4.00%	18-Sep-17
Police and Nurses Bank	A2	TD	\$5,000,000.00	1825	3.74%	22-Feb-22
Police and Nurses Bank	A2	TD	\$2,000,000.00	1459	3.50%	18-Dec-20
Police Credit Union Ltd (SA)	NR	TD	\$2,000,000.00	1827	4.75%	30-May-19
Police Credit Union Ltd (SA)	NR	TD	\$1,000,000.00	1098	4.25%	22-May-17
Police Credit Union Ltd (SA)	NR	TD	\$2,000,000.00	183	2.87%	13-Jun-17
Qld Police Credit Union	NR	TD	\$1,000,000.00	1095	4.10%	17-Aug-17
Rabobank	A1+	TD	\$2,000,000.00	1462	3.30%	2-Sep-19
Rabobank	A1+	TD	\$2,000,000.00	1826	4.10%	2-Sep-19
Rabobank	A1+	TD	\$2,000,000.00	1461	4.10%	21-Aug-18
Rabobank	A1+	TD	\$2,000,000.00	1826	4.52%	19-Jun-19
Rabobank	A1+	TD	\$2,000,000.00	1463	4.35%	6-Jun-18
Rabobank	A1+	TD	\$2,000,000.00	1100	4.00%	30-Jun-17
Rabobank	A1+	TD	\$2,000,000.00	1097	4.00%	26-Jun-17
Rabobank	A1+	TD	\$1,000,000.00	1098	4.05%	22-May-17
			\$147,951,408.07			
Grandfathered	ST Rating	Security Type	Current Valuation			Maturity Date
Macquarie Global Income Opportunities	NR	MF	\$1,773,787.74			T+3
T-Corp Cash Fund	AAAm	MF	\$43,103,863.60			T+0
			\$44,883,657.34			
Product	ST Rating	Security Type	Current Valuation			Maturity Date
AMP At Call	A1	Cash	\$4,813,261.04			At-Call
AMP Notice Account	A1	Cash	\$9,604,951.72			31 Days
NAB Transaction Account	A1+	Cash	\$12,156,957.31			At-Call
			\$26,575,170.07			
Total Investment Portfolio			\$219,410,235.48			

Disclaimer

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All information and recommendations expressed herein constitute judgements as of the date of this report and may change without notice. Staff and associates may hold positions in the investments discussed, and these could change without notice.



Local Approvals Policy

ON-SITE SEWAGE MANAGEMENT

(Development Control Plan No. 78)
Amendment No.2

Policy Number: POL16/268
Originally Adopted: 15/9/1998
Effective: 3/07/2013

Amended: 25/1/2005, 8/09/2009, 21/06/2013
Minute Numbers: MIN98.1779, MIN05.16, MIN09.1223, MIN13.637
File: 3399E

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Shoalhaven City Council - On-Site Sewage Management

Introduction

The Shoalhaven is well known for its natural attributes including its magnificent waterways. Development must be undertaken in a manner that protects the natural environment and the health of our community.

If not managed properly, the on-site application of effluent has the potential to degrade our environment and create a public health risk. For example, waterways may suffer environmental degradation as a result of incremental pollution from multiple sources, rather than from large individual point sources.

A subdivision or development proposal need not be located adjacent to waterways to be impacted upon by effluent. Physical features such as poor soils, steep slopes and fractured bedrock can aid the rapid transmission of effluent to a waterbody, even though the site may be quite distant. It is therefore important that such features are identified and managed so that effluent cannot pollute the natural environment.

Purpose

The purpose is to:

- specify the environmental and public health requirements for the on-site storage, ~~treatment and application of effluent~~ processing, re-use or discharge of sewage or by-products of sewage; and
- detail the information required to be provided with applications for Council approval.

Citation

This ~~Development Control Plan~~/Local Approvals Policy (hereafter referred to as ~~Plan~~/Policy) has been developed to assist with the implementation of the objectives listed below.

This ~~plan~~/policy may be cited as Shoalhaven ~~Development Control Plan No. 78~~Local Approvals Policy – On-site Sewage Management.

Objectives

The objectives of this ~~plan~~/policy are to:

- O1 Minimise the risk to public health ~~by minimising or eliminating c~~contact with effluent, particularly by children, the elderly and immune-compromised members of our community, ~~is to be minimised or eliminated. The application of effluent and its by-products is to be managed; and~~ carefully managing the application of effluent and its by-products.
- O2 Prevent the deterioration of land and protect vegetation quality through soil structure degradation, salinisation, waterlogging, chemical contamination or soil erosion.
- O3 Protect surface waters ~~by preventing from~~ contamination from any flow from treatment systems and land application areas. ~~(including effluent, rainfall run-off and contaminated groundwater flow).~~
- O4 Protect groundwaters from contamination from any flow from treatment systems and land application areas.
- O5 Conserve water resources, reuse domestic wastewater (including nutrients, organic matter and water) where possible and within the constraints of other performance objectives.

Shoalhaven City Council - On-Site Sewage Management

- O6 Protect community amenity by not unreasonably interfering with quality of life and by giving consideration to aesthetics, odours, dust, vectors and excessive noise which may impact on the local amenity.

Where this applies

This [plan](#)/policy applies to all land in the City of Shoalhaven, other than land where an exemption applies (see Part 1). A sewage management facility includes greywater systems and is defined by the Local Government Act, 1993 as:

- a) A human waste storage facility; or
- b) A waste treatment device intended to process sewage, and includes a drain connected to such a facility or device.

Accordingly, the whole on-site sewage management system is comprised of three phases using:

Phase 1 – drains capturing wastewater from the fittings and conveying the wastewater to the storage or treatment device. Drains may be absent for a waterless composting toilet;

Phase 2 – a human waste storage facility or treatment device;

Phase 3 – drains representing the method of application or disposal of treated wastewater.

Relationship to Other [Planning Instruments](#) [Legislation](#), Standards and Guidelines

This [plan](#)/policy must be applied in conjunction with the following:-

[Planning Instruments](#) [Council Policies & Guidelines](#)

- a) Shoalhaven Local Environmental Plan 2014
- b) [Shoalhaven Development Control Plan \(DCP\) 2014](#), in particular [Chapter G8 On-site Sewage Management](#) and area specific chapters such as [Chapter N11: Nowra Hill – Cabbage Tree Lane](#) and [Chapter G20: Jerrberra Estate](#)
- c) [Liquid Tradewaste Discharge to the Sewerage System Policy](#)
- d) [Council brochures and pamphlets](#)

[Legislation](#)

- a) [National Parks and Wildlife Act 1974](#)
- e) [Protection of the Environment Operations Act 1997](#)
- f) [Roads Transport \(Vehicle Registration Act 1997](#)
- g) [Local Government Act 1993](#)
- h) [Local Government \(General\) Regulation 2005](#)
- i) [State Environmental Planning Policy \(Sydney Drinking Water Catchment\) 2011](#)
- b) [Environmental Planning & Assessment Act 1979 \(Section 91- Integrated Development\) and regulation \(Schedule 3 – Designated Development\)](#)
- k) [Jervis Bay Regional Environmental Plan \(Deemed SEPP\) 1996](#)

[External Policies & Guidelines](#)
[Industry Standards and Guidelines](#)

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Shoalhaven City Council - On-Site Sewage Management

- d) AS/NZ 1547 On-site domestic wastewater management
- e) AS/NZ 1546 On-site domestic wastewater treatment units
- f) Environmental Guidelines for Industry – The Utilisation of Treated Effluent by Irrigation (Draft) EPA 1995
- g) Environment and Health Protection Guidelines. On-site Sewage Management for Single Households 1998
- h) Interim NSW Guidelines for Management of Private Recycled Water Schemes 2008
- i) NSW Guidelines for Greywater Reuse in Sewered, Single Household Residential Premises 2008;
- j) Designing and Installing On-site Wastewater Systems. A Sydney Catchment Authority Recommended Practice, Sydney Catchment Authority 2012;
- k) Neutral or Beneficial Effect on Water Quality Assessment Guideline (NorBE), Sydney Catchment Authority 2011;
- l) Developments in Sydney's Drinking Water Catchment. Water Quality Information Requirements, Sydney Catchment Authority 2011;
- u) [Sydney Drinking Water Catchment area map \(including Kangaroo Valley and parts of Sassafras\)](#);
- v) [Environmental Guidelines. Use of Effluent by Irrigation. Department of Environment and Conservation \(NSW\) 2004.](#)
- w) [Manual of Practice, Sewer Design, Department of Public Works, 1984; a](#) and
- x) Various advisory notes from the NSW Ministry of Health.

Designated Development

Schedule 3 of the Environmental Planning and Assessment Regulations, 2000 to the Environmental Planning and Assessment Act, 1979 (EPAA) identifies sewerage systems and sewer mining systems as designated development when specific criteria are met.

Hydraulic load estimations for various developments can be assisted by the "Manual of Practice, Sewer Design" (Department of Public Works, 1984) and the Australian/New Zealand Standard 1547 On-Site Domestic wastewater Management.

If a development is designated, a development application must be accompanied by an Environmental Impact Statement and must be assessed in accordance with the provisions of EPAA and Regulations.

How to Use this Plan/Policy

Part 2 of this [plan/policy](#) specifies development guidelines for wastewater treatment and application on land where approval may be granted to install an on-site sewage management facility, as defined by the Local Government Act, 1993. Guidelines for the installation of Sewage Management Facilities are performance based rather than prescriptive. The performance method concentrates on matters to be considered in preparing, or assessing, a design (called *performance criteria*) in order to achieve a desired result (the stated objectives of this [plan/policy](#)).

The *performance criteria* are general statements of the means of achieving the objectives of this [plan/policy](#). *Acceptable solutions* are provided as examples of what is considered

Shoalhaven City Council - On-Site Sewage Management

acceptable to enable *performance criteria* to be achieved. They are simply examples, and do not exclude other solutions that achieve the desired performance criteria.

It should be noted, however, that the acceptable solutions outlined within this document have been the result of intensive investigation and research and are based on information gained from Australian Standards or the NSW Government "Environment and Health Protection Guidelines". Any alternative solutions put forward for a proposal must be able to demonstrate how the proposal achieves the performance criteria.

PART 1. EXEMPTION CIRCUMSTANCES

1.1. Exemptions

There may be circumstances in which Council approval for a sewage management facility is not required.

- I. Clause 48 of the Local Government (General) Regulation 2005 identifies the following activities that may be carried out without the prior approval of the council subject to the conditions specified:
 - (1) The installation, construction or alteration of a waste treatment device, if that installation, construction or alteration is done:
 - (a) under the authority of a licence in force under the Protection of the Environment Operations Act 1997, or
 - (b) in a vessel used for navigation, or
 - (c) in a motor vehicle registered under the Roads Transport (Vehicle Registration) Act 1997 that is used primarily for road transport.
 - (2) To operate a system of sewage management so that much of the operation of a system of sewage management is limited to an action carried out:
 - (a) under the authority of a licence in force under the Protection of the Environment Operations Act 1997, or
 - (b) in a vessel used for navigation, or
 - (c) in a motor vehicle registered under the Roads Transport (Vehicle Registration) Act 1997 that is used primarily for road transport.
- II. Clause 163B of the National Parks and Wildlife Act 1974 identifies that Chapter 7 of the Local Government Act 1993 does not apply to lands reserved or dedicated under the National Parks and Wildlife Act 1974, with the exemption of karst conservation reserves. Section 68 of Chapter 7 of the Local Government Act identifies the requirement to obtain council approval to install and to operate a system of sewage management.
- III. Clause 75A(2) of the Local Government (General) Regulation 2005 details the requirements that are to be met for the diversion of domestic greywater to be carried out without the prior approval of Council.
- III-IV. [Clause 47 of the Local Government \(General\) Regulation 2005 details the circumstances where a person who purchases \(or otherwise acquires\) land on which any on-site sewage management system is installed or constructed, may temporarily operate such a system without Council approval.](#)
- IV-V. Exemption for the installation of a system that is not in accordance with this [plan](#)/policy may only be approved by Council resolution.

1.2. Variations

Shoalhaven City Council - On-Site Sewage Management

Departures from the standards set out within this plan/policy will be considered where justification is demonstrated and such departure will not compromise the objectives of the standard of the plan/policy in general.

Council reserves the right to make minor amendments to the plan/policy from time to time without notice and to allow variations from the development standards contained herein based on merit. All amendments will be subject to future changes in Australian Standards and the current guidelines of recognised State authorities.

PART 2. CRITERIA FOR DETERMINATION OF AN APPLICATION

2.1. Performance Criteria and Acceptable Solutions

The following development standards apply to all applications to install or construct whole or part of a sewage management facility, including those

- Applications associated with a dwelling house, tourist/commercial developments and subdivisions.
- Applications for These standards are also to be applied to applications for temporary facilities.
- Applications to and applications for approval to alter an existing sewage management facility.

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Performance Criteria	Acceptable Solutions
<p>P1 The system is designed and located to ensure adequate separation between effluent application areas and water bodies to protect the quality of water bodies. Adequate separation is to be provided between effluent application areas and water bodies.</p> <p>Note: A buffer distance is measured as a ground surface flow line and is not based on the closest measured distance.</p>	<p>A1.1 The A minimum buffer distance of 100 metres is provided between effluent application areas, (particularly land application areas) is 100 metres to and any perennial watercourse or water body.</p> <p>A1.2 A minimum buffer distance of 40 metres is provided between effluent application areas and 40 metres to any intermittent watercourse or water body.</p> <p><i>Note: A special policy applies to land within Sydney's Drinking Water Catchments in relation to buffers – See Part 2.53</i></p>
<p>P2 The system is designed and located to protect the quality of groundwater. Adequate Buffers are provided to ensure adequate separation is to be provided between effluent application areas and ground water.</p>	<p>A2.1 The minimum depth to ground water is 1.2 metres (absorption trenches) or 0.6 metres (application of secondary quality effluent with disinfection and from the base of a mound system).</p> <p>A2.2 The minimum soil depth to bed rock (of low strength or harder) or other confining layer is 1.2 metres (absorption trenches) or 0.5 metres (application of secondary quality effluent with disinfection and from the base of a mound system).</p>

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Shoalhaven City Council - On-Site Sewage Management

Performance Criteria	Acceptable Solutions
	<p>(a) The minimum depth to ground water is 1.2 metres (absorption trenches) or 0.6 metres (application of secondary quality effluent with disinfection; and from the base of a mound system).</p> <p>(b) The minimum soil depth to bedrock (of low strength or harder) or other confining layer is 1.2 metres (for absorption trenches) or 0.5 metres (for application of secondary quality effluent with disinfection; and from the base of a mound system).</p> <p>- <i>Note: AS/NZS 1547:2012 gives a range of acceptable depths depending on a number of factors, including, but not limited to, soil type, quality of the effluent and application method.</i></p>
<p>P3 The system is designed and located to ensure adequate separation between the application areas and property boundaries, pools, other buildings and other effluent application areas.</p> <p>Note: AThe buffer distance is measured as a ground surface flow line and is not based on the closest measured distance.</p>	<p>A3.1 TheA minimum horizontal setback distance from the perimeter of any application area is provided in accordance with Table 1.</p> <p>A3.1 In the case of allotments being generated through subdivision, an additional horizontal setback distance applies where a plan has been submitted showing the proposed location of on-site systems. A minimum buffer distance between potential effluent application areas and proposed diversion drains on separate allotments is 40 metres.</p> <p>In the case of allotments being generated through subdivision, where a plan has been submitted showing the proposed location of on-site systems, the buffer distance between potential effluent application areas and proposed diversion drains on separate allotments is 40 metres.</p>
<p>P4 Wastewater treatment systems and application areas will not be adversely affected during flood periods.</p> <p>Note: Where the land identified for wastewater treatment or application is flood prone, a Flood Certificate is required and the Projected 2050 flood levels are to be adopted.</p>	<p>A4.1 All wastewater treatment systems and application areas are located above the 1 in 20 year flood level. Systems with electrical components are located above the 1 in 100 year flood level.</p> <p><i>Note: Sealed submerged pumping facilities may be located below the 1:100 flood levels with appropriate flood protection.</i></p>

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Performance Criteria	Acceptable Solutions
<p>P5 Catchment-wide consideration is incorporated in the selection, design, siting, construction, operation and maintenance of wastewater management systems.</p> <p><u>Note: Council encourages the use of sub-surface application of effluent in lieu of surface spray irrigation. This is due to the higher potential risk to the environment and public health of the latter.</u></p>	<p>A5.1 <u>Irrigation areas are to be as level as possible with a maximum slope of 12% for spray irrigation. Sub-surface irrigation systems are to be utilised on steeper slopes where site stability is not compromised and surfacing of effluent will not occur.</u></p> <p>A5.2 <u>Sites are to be contoured to direct surface water flow away from application areas.</u></p> <p>A5.3 <u>The construction of a sewage management system is to be in accordance with AS/NZS 1546.1 – "On-Site Domestic Wastewater Treatment Units".</u></p> <p>A5.4 <u>The minimum size of septic tanks and holding tanks are to be in accordance with AS/NZS 1547 and Water NSW's requirements where the property is located within Sydney's Drinking Water Catchment.</u></p> <p>A5.5 <u>Effluent application areas (in a location where they can meet the objectives) are to be designed and constructed in accordance with the provisions of AS/NZS 1547 and this policy. Textural classification of the soil profile is to be examined to determine the long-term acceptance rate and to assist in the design of the sewage management system.</u></p> <p>A5.6 <u>Where soils exhibit a high permeability (greater than 3.5 m/day) the applicant is to demonstrate through further investigation that pollution of groundwater will not occur.</u></p> <p>A5.7 <u>A Reserve (secondary) area of 100% of the design area is identified upon the site for expansion and contingencies. The reserve area is protected from any development that would prevent its use in the future.</u></p> <p><u>(a) Irrigation areas are as level as possible with an absolute maximum slope of 12% for spray irrigation. Steeper slopes utilise sub-surface irrigation systems where site stability is not compromised and surfacing of effluent will not occur.</u></p>

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Shoalhaven City Council - On-Site Sewage Management

Performance Criteria	Acceptable Solutions
	<p>(b) Sites are contoured to direct surface water flow away from disposal areas.</p> <p>(c) The construction of sewage management facilities are in accordance with AS/NZS 1546.1 "On-Site Domestic Wastewater Treatment Units".</p> <p>(d) Minimum size of septic tanks and holding tanks are in accordance with AS/NZS 1547 and The Sydney Catchment Authority's requirements, where the property is located within Sydney's Drinking Water Catchment.</p> <p>(e) Effluent application areas (in a location where they can meet the objectives) are designed and constructed in accordance with the provisions of AS/NZS 1547 and this plan/policy. Textural classification of the soil profile has been examined to determine the long-term acceptance rate, and to assist in the design for the sewage management facility.</p> <p>(f) Where soils exhibit high permeability (greater than 3.5m/day) further investigation has demonstrated that pollution of groundwater does not occur.</p> <p>(g) A Reserve (secondary) area of 100% of the design area is identified upon the site for expansion and contingencies. The reserve area is protected from any development that would prevent its use in the future.</p> <p><i>Note – Reserve area is based upon hydraulic calculations.</i></p> <p>A5.8 On small allotments it may not be possible to provide a reserve area. The designer, in consultation with Council, is to assess the options available for the site. The designer is to propose an appropriate design that provides security in the case of unsatisfactory performance.</p> <p>A5.9 The proposed and future developments of the allotments can be accommodated. For example, a proposal may include a dwelling, outbuildings, driveways, sealed areas and primary recreational area in addition to the on-site sewage management area. More than one type of effluent application system can be achieved for each allotment.</p> <p>(h) On small allotments it may not be possible</p>

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Performance Criteria	Acceptable Solutions
	<p>to provide a reserve area. The designer, in consultation with Council, has assessed the options available for the site and selected an appropriate design to provide security in the case of unsatisfactory performance.</p> <p>(i) In the case of allotments being generated through subdivision, it must be demonstrated that the proposed and future developments of the allotments can be accommodated. For example, a proposal may include a dwelling, outbuildings, driveways, sealed areas, primary recreational area. It must also be demonstrated that more than one type of effluent application system can be achieved for each allotment.</p>
<p>P6 Sufficient area is provided for sub-surface absorption and irrigation of effluent so that effluent is not transported off the site.</p>	<p>A6.1 To determine suitable application areas, a minimum available irrigation area is calculated/determined utilising water balance and nutrient balances to determine suitable application areas, as specified within the "Environmental Health Protection Guidelines" (1998) and AS/NZS 1547.</p>
<p>P7 Appropriate provision is made for wet weather storage of treated effluent during wet weather periods when it is inappropriate to spray irrigate.</p> <p>Assessment of the need for wet weather storage must be based upon an accepted standard and criteria, such as population, rainfall, evaporation, soil permeability, soil depth and effluent quality must be used.</p>	<p>A7.1 Wet weather storage is provided to for surface irrigation systems for periods of wet weather and when soils in the application area will become saturated. Wet weather storage is provided in accordance with the recommendations of the "Environment and Health Protection Guidelines" (1998).</p> <p>Note: Systems designed for wet weather storage may range from impervious storage either above or below ground, to subsurface storage/disposal systems. Details of the wet weather storage are to be submitted to Council for approval.</p>
<p>P8 Effluent is wholly contained wholly within the boundaries of the site. The application and the distribution area is designed to ensure that ponding of effluent or waterlogging of the soil profile does not occur.</p>	<p>A8.1 (a) Irrigation areas are designed in accordance with this plan/policy and/or AS/NZS 1547 and may be either surface or sub-surface systems, where sub-surface systems are generally preferable.</p> <p>A8.2 In the case of allotments being generated through subdivision, the minimum size for an allotment is 2 500 m².</p> <p>(b) In the case of allotments being</p>

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Performance Criteria	Acceptable Solutions
	<p>generated through subdivision, the minimum size for an individual allotment is 2 500 m².</p> <p><i>Note: The minimum lot size has been determined after considering areas required for elements such as buildings, outbuildings, set-back distances and unimpeded open space for private recreation.</i></p> <p><i>Allotments located in Sydney's Drinking Water Catchment that are proposed to be subdivided are to be referred to require concurrence from the Sydney Catchment Authority Water NSW.</i></p>
<p>P9.1 People, their pets or other objects to which people may be exposed must not <u>are not to</u> come into contact with undisinfected non-disinfected wastewater, including greywater systems.</p>	<p>A9.1 (a) Land application and treatment systems are to be installed in accordance with the former NSW Health Advisory Note 4 Sewage Management Facility Accreditation April 2008 Sewage Management Facility Accreditation Criteria Based on the Final Application of Treated Effluent and Risk of Disease Transmission (April 2008).</p> <p>A9.2 Wastewater, that has not been disinfected, is not to be applied to the ground surface.</p> <p>A9.3 Effluent application areas are not to be used as the primary recreation areas for a property.</p> <p>(b) Wastewater, that has not been disinfected, is not to be directed to the ground surface.</p> <p>(c) Effluent application areas are not to be used as the primary recreation areas for a property.</p> <p>A9.2 (a) Where effluent application is by spray irrigation the application area is isolated so as not to be used for passive or active recreation purposes (fenced off, delineated garden etc). Such areas are also to be stock proof, during and immediately after application.</p> <p>(b) The application area is not used to grow vegetables for human consumption. Use of effluent for fruit trees complies with the recommendations of AS/NZS 1547.</p>
<p>P9.2 To ensure that areas used for spray irrigation are not used for recreation purposes or the growing of vegetables.</p>	
<p>P10 Areas used for spray irrigation are not</p>	<p>A10.1 Where effluent is applied via spray</p>

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Performance Criteria	Acceptable Solutions
<u>used for recreation purposes or the growing of vegetables.</u>	<u>irrigation, the application area is to be isolated so as not to be used for passive or active recreation purposes (fenced off, delineated garden etc.). Such areas are also to be stock proof, during and immediately after application.</u> <u>A10.2 The application area is not used to grow vegetables for human consumption. Use of effluent for fruit trees complies with the recommendations of AS/NZS 1547.</u> <u>Note: Effluent disposal under trees is not prohibited.</u>
P110 To ensure that surface Surface application/reuse areas are adequately signposted.	A11.10 Warning signs are erected within the effluent application area in accordance with the provisions of AS/NZS 1547 and AS 1319.
P12 Designs that incorporate alternative technology demonstrate best practice.	A12.2 System designs (new or existing) that incorporate alternative technology do not prejudice the integrity of the system.
P13 Where permissible, each dual occupancy site includes a separate system that is designed to incorporate best practice and adequate separation between systems.	A13.1 A separate on-site sewage management system is to be provided for each occupancy/dwelling and information provided in accordance with subsection 3.3 of this policy.

Note: For application submission requirements for proposals involving **less** than 12 persons capacity or subdivisions involving the creation of 4 lots or less, see subsection 3.4.2 of this plan/policy.

For application submission requirements for proposals involving **more** than 12 persons capacity or subdivisions involving the creation of more than 4 allotments or developments in environmentally sensitive locations, see subsection 3.4.3 of this plan/policy.

Table 1 – Required minimum buffer distances for on-site systems

System	Minimum buffer distances ¹
All land application systems	<ul style="list-style-type: none"> See Part 2.5 for specific requirements for land within Sydney's drinking water catchments. 100 metres to permanent surface waters (eg river, streams, lakes, etc.) 100 metres to any groundwater bores² 40 metres to other waters (eg farm dams, intermittent waterways, street drainage

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	including gutters, swales and table drains and drainage channels, etc)	
<u>All land application systems located on land within Sydney's Drinking Water Catchment</u>	<ul style="list-style-type: none"> Refer to the Buffer distances within the former Sydney Catchment Authority's <u>Neutral or Beneficial Effect on Water Quality Assessment Guidelines</u> 	Formatted: Font: Italic
<p>Surface spray irrigation</p> <p>Secondary treated effluent with disinfection or higher</p> <p>(irrigation systems to conform to AS/NZS 1547)¹⁵⁴⁷</p> <p><u>Note: Secondary treatment means anaerobic and aerobic biological processing and settling or filtering of effluent received from a primary treatment unit. Effluent quality following secondary treatment is expected to be equal to or better than 20 mg/L five-day biochemical oxygen demand and 30 mg/L suspended solids.</u></p>	<ul style="list-style-type: none"> 6 metres if area¹⁵⁴⁷ up-gradient and 3 metres if area¹⁵⁴⁷ down-gradient of driveways and property boundaries. 15 metres to dwellings 3 metres to paths and walkways 6 metres to swimming pools and buildings 	Formatted: Not Superscript/ Subscript
<p>Surface drip and trickle irrigation</p> <p>Secondary treated effluent with disinfection or higher</p>	<ul style="list-style-type: none"> 6 metres if area¹⁵⁴⁷ up-gradient and 3 metres if area¹⁵⁴⁷ down-gradient of swimming pools, property boundaries, driveways and buildings, including dwellings. 	Formatted: Font: Italic
<p>Sub-surface irrigation</p> <p>Secondary treated effluent or higher</p>	<ul style="list-style-type: none"> 6 metres if area¹⁵⁴⁷ up-gradient and 3 metres if area¹⁵⁴⁷ down-gradient of swimming pools, property boundaries, driveways and buildings, including dwellings. 	
<p>Absorption system</p> <p>Primary treated effluent or higher</p> <p><u>Note: Primary treatment is the separation of suspended material from wastewater by settlement and/or flotation in septic tanks, primary settling chamber, anaerobic process of treatment prior to effluent discharge to either a secondary treatment process, or to a land application system.</u></p>	<ul style="list-style-type: none"> 12 metres if area¹⁵⁴⁷ up-gradient and 6 metres if area¹⁵⁴⁷ down-gradient of property boundary 6 metres if area¹⁵⁴⁷ up-gradient and 3 metres if area¹⁵⁴⁷ down-gradient of swimming pools, driveways and buildings, including dwellings. 	

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¹ The buffer distance is measured as a ground surface flow line and is not based on the closest measured distance.
Notes to Table 1:

² Where a bore is within 100 metres of a proposed effluent management area the application must include a statement from the owner that the bore is not used for potable domestic water supply. Alternatively, or must have a groundwater drawdown analysis done is to be completed using an appropriate methodology such as Cromer, Gardner and Beavers', 2001 "An improved viral die-off method to estimate setback distances".

³ Irrigation systems shall must conform to AS/NZS 1547, in particular:

- Bury Distribution lines must be buried to a minimum depth of 100mm
- Use Sprinklers must that throw no more than 2 m and produce coarse droplets, with a maximum plume height of 400 mm above finished ground level (commercial systems shall will need to demonstrate method of compliance)
- Do not use Standard household hose tapes and garden fittings must not be used
- Signpost Surface irrigation areas must be signposted with at least two signs, clearly visible to occupants and visitors stating:

**Recycled Water
Avoid Contact
DO NOT DRINK**

- Subsurface systems are to comply with Appendix M of AS/NZS 1547

⁴ "Area" means "effluent disposal area"

2.2. Effluent Pumpout

Pumpout services are made available in towns and villages in the City of Shoalhaven where reticulated sewerage services are not available. The Council may approve of effluent pumpout services in other circumstances, for example for protection of the environment.

Pumpout services are not cost effective or efficient compared to on-site sewage management or reticulated sewerage. Transportation of effluent by truck (tanker) creates traffic and pollution issues. In addition the transport of tradewaste prevents Council from entering and implementing good management practices outlined in Council's Liquid Tradewaste Discharge to the Sewerage System Policy.

The following is required to ensure that the installation of pumpout systems is environmentally and economically efficient:

- New effluent pumpout services shall be generally allowed on existing lots within the unsewered residential or commercially zoned area within the City that was existing prior to the adoption of Council's former Effluent Pumpout Policy on 28 August 2007.

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~~That~~ new pumpout services are not to be provided to new subdivisions or new rezonings.

- ~~That~~ pumpout services are not to be provided to multi-unit development in villages not designated for future reticulation services. Future reticulation services are identified in Council's adopted 20 year financial and capital works forward plan.

For proposed multi dwelling and subdivisions in villages identified for future reticulation services, pumpout services may only be provided by resolution of Council, and if so approved the applicant meets all associated costs in relation to provision of the service including the reticulation services within and outside the land (to properly serve the land) and pay the full calculated developer charge for any newly created dwellings and/or lots.

Further to the above, in regard to the provisions of new effluent pumpout services, Council resolved on 19 December, 1995 that:

- If Council resolves s to allow a new effluent pumpout service for a particular circumstance which is not in accordance with policy then the pumpout service be at the full cost of providing the pumpout service and this be noted on the Section 149 Certificate and Title Deeds.

2.3. Dual Occupancy Development

~~Dual occupancy development requiring on-site sewage management will only be permitted under certain conditions, depending on whether the land is a rural or urban area. For full details, please refer to Council's LEP and DCPs. A separate on-site sewage management system is to be provided for each occupancy/dwelling and information provided in accordance with subsection 3.4.3 of this plan/policy.~~

2.4. Alternative or Additional Technology

~~Council may consider the use of alternative technology, subject to the approval of NSW Health if necessary, where it can be demonstrated that the proposal is the best practice for the proposed site. Council will also consider the inclusion of additional technology, such as filters, to an approved effluent management system where such technology can be installed so as not to prejudice the integrity of the system.~~

2.5.2.3. Special Requirements for Sydney's Development in the Sydney Drinking Water Catchment

Note: From 1 January 2015, the Sydney Catchment Authority ceased to exist and the concurrence powers under the State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 were transferred to Water NSW, as specified in the Water NSW Act 2014.

Water NSW manages and protects the Sydney drinking water catchment through the regulation of developments in the catchment, consistent with State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (SEPP). Development requiring consent in the Sydney drinking water catchment must have a neutral or beneficial effect on water quality in accordance with the requirements of the SEPP.

Note: In the Shoalhaven, such land includes Kangaroo Valley and parts of the Sassafras area.

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The SEPP aims to:

- Provide for healthy water catchments that will deliver high quality water, while permitting development that is compatible with that goal; and
- Provide that a consent authority must not grant consent to a proposed development unless it is satisfied that the proposed development will have a neutral or beneficial effect on water quality; and
- Support the maintenance or achievement of the water quality objectives for the Sydney drinking water catchment.

2.3.1. Requirements under the SEPP

Under the SEPP, Council cannot grant development consent unless it is satisfied the development will have a neutral or beneficial effect on water quality. A neutral or beneficial effect on water quality is satisfied if the development:

- has no identifiable impact on water quality; or
- will contain any water quality impact on the development site and stop it from reaching any watercourse, waterbody or drainage depression on the site; or
- will transfer any water quality impact outside the site where it is treated and disposed of to standards approved by the consent authority.

2.3.2. Neutral and Beneficial Effect Guidelines and Tool

The Neutral or Beneficial Effect on Water Quality Assessment Guidelines (NorBE Guideline) and accompanying software application the Neutral and Beneficial Effect on Water Quality Assessment Tool (NorBE Tool) assists councils in their assessment of whether a development has a neutral or beneficial effect on water quality.

The consent authority must refer more complex development applications to Water NSW for concurrence before it can approve the development. The developments that require concurrence are determined by applying the NorBE Tool.

2.3.3. Water Cycle Management Study

All developments in the drinking water catchment must be accompanied by a Water Cycle Management Study. The level of information contained in the Water Cycle Management Study will vary depending on the complexity and the risk to water quality. The NorBE Guidelines and publication *Developments in the Sydney Drinking Water Catchment – water quality information requirements* categorise development into five modules according to the complexity and risk to water quality posed by a development. Applicants and consultants should refer to these publications for further information and modelling required. Land located within the hydrological catchment of Sydney's Water supply is subject to State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011. Please refer to the SEPP <http://www.legislation.nsw.gov.au>

In the Shoalhaven, such land includes Kangaroo Valley and parts of the Sassafras area. Please refer to www.sca.nsw.gov.au for detailed maps of Sydney's Drinking Water Catchments.

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The SEPP was published on 21 January 2011 and came into force on 1 March 2011. The SEPP supersedes Drinking Water Catchments Regional Environmental Plan No 1 and contains provisions for the protection of the water quality of the drinking water catchment.

Clause 10 of the SEPP states that development consent can not be granted unless there is neutral or beneficial effect on water quality. The Sydney Catchment Authority has produced *Neutral or Beneficial Effect (NorBE) on Water Quality Assessment Guidelines* for use by proponents, available for download from the Sydney Catchment Authority website: <http://www.sca.nsw.gov.au/>

Council's assessing officers determine whether the application requires referral to the Sydney Catchment Authority, or if the proposal meets the NorBE guidelines without requiring referral to the Sydney Catchment Authority.

For on-site sewage management with no adverse impact on water quality, the *Neutral or Beneficial Effect on Water Quality Assessment Guidelines* identifies the following setback distances are required from the effluent management area:

- 40m buffer to a drainage depression or farm dam
- 100m buffer to a watercourse; and
- 150m buffer to a named river (the two named rivers within the Shoalhaven are the Shoalhaven River and Kangaroo River).

Note: The Neutral or Beneficial Effect on Water Quality Assessment Guidelines provide the following definitions:

Drainage Depression— A low point that carries water during rainfall events, but dries out quickly once rainfall has ceased. A gully or incised drainage depression is considered to constitute a watercourse.

Watercourse— means any river, creek, stream or chain of ponds, whether artificially modified or not, in which water usually flows, either continuously or intermittently, in a defined bed or channel, but does not include a waterbody (artificial).

Note: The buffer distance is measured as a ground surface flow line and is not based on the closest measured distance.

2.6.2.4. Integrated Development

Any proposal involving activity or excavation adjacent to a watercourse or waterbody may require an approval under the Water Management Act, 2000. Any such development will be assessed as an integrated development application under Section 91 of the EPAA.

PART 3. OTHER MATTERS

3.1. Current On-Site Technologies

The following is a summary of [information on](#) some of the more commonly known on-site wastewater treatment technologies, on which this [plan](#) policy is based, [may be found on](#)

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[Council's website](#). These systems include conventional septic absorption systems, cart-away (pumpout) systems, aerated wastewater treatment systems (AWTS), and composting toilets.

3.1.1. Conventional Septic Systems

Traditionally, in unsewered areas, effluent from dwellings has received primary treatment in a conventional septic tank before being absorbed in underground trenches. This system has relied on the soil completing the treatment process as the effluent moves through the strata. Not all soils, however, are suitable for absorption trenches, particularly in village areas with small blocks. In some areas, Council has had to provide a cart-away (pump-out) system whereby the effluent is pumped out and treated at one of Council's sewage treatment works.

Even on large allotments, the soils must have the correct characteristics to satisfactorily treat the effluent. Unsuitable soils may cause effluent to reach the surface and/or groundwater and adversely affect receiving water bodies. Several types of soils within the Shoalhaven do not have the characteristics necessary to treat effluent from septic tank systems without having a cumulative adverse impact on the receiving environment.

Areas of this nature may be limited in terms of development density, due to the environmental characteristics and the outlined objectives.

Soil absorption systems generally do not comply with the performance objectives of the "Environment and Health Protection Guidelines". They could, however, be appropriate in some circumstances depending upon the site factors (particularly soil type, groundwater depth and development density).

3.1.2. Cart-away (Pumpout) Systems

These systems incorporate both the use of a conventional septic tank to remove solids from the wastewater and a holding tank to store the wastewater for collection in a road tanker. These systems are costly to operate and therefore some property owners will try to reduce pumpout costs by illegally discharging effluent to the environment. Council has experienced numerous public health and pollution problems where there are large numbers of pump-out systems.

Consequently, Council is aiming to minimise the numbers of these systems. Over a number of years, Council has been aiming to ultimately phase out pump-out systems as all major villages are eventually provided with a sewerage system. Pump-out systems in rural areas are undesirable because these areas are unlikely ever to be seweraged and the real cost of providing this service will become prohibitive.

3.1.3. Aerated Wastewater Treatment Systems (AWTS)

The aerated wastewater treatment system (AWTS) is an alternative to the conventional septic system. This effluent is treated to a level known as secondary treatment with the effluent also undergoing disinfection by chlorination or ultra violet light to remove bacteria and other micro-organisms. This allows the effluent to be spray irrigated above ground in most situations without any major health risk.

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Because the effluent is treated to a higher standard than the conventional septic tank, it contains fewer potential harmful pathogens. However, if the effluent is not appropriately disposed of, unacceptable levels of pollution will still enter the receiving environment.

The higher level of treatment achieved in an AWTS is conditional upon the system receiving regular maintenance. Without regular maintenance by a suitably qualified person, significant public health and pollution problems could eventuate.

Another potential problem with spray irrigation of effluent from an AWTS occurs when fixture usage (like toilets and showers) in the home is sufficient to cause the pump to cut in. This occurs regardless of prevailing weather conditions and, therefore, many operating AWTS will spray irrigate effluent even when it is raining. This effluent may run off site and into the receiving environment, adding to the pollutant load. This problem is particularly relevant in areas of high rainfall. Possible solutions include the installation of a wet weather storage facility or the installation of subsurface irrigation areas, where the soil will permit, and/or addition of good quality soil blend where the existing topsoil depth/structure is inadequate.

A Hydraulic water balance shall be the determining factor relating to the requirement for wet weather storage.

3.1.4.—Composting Toilets

In these systems, toilet wastes pass from the pan down a chute and into a chamber similar in size to a conventional septic tank. All faecal matter and other compostable matter produced in the dwelling, such as toilet paper, may be disposed of to this system where it is broken down into compost by natural decomposer organisms. When fully broken down, the compost may be used in gardens but must be buried and covered.

A fan connected to a vent pipe produces negative air pressure within the composting chamber. This aims to draw all odours out and away from the toilet pan (and the inside of the dwelling).

These systems treat only toilet wastes, and all other liquid wastes from the shower, kitchen and laundry (sullage wastes or grey water) must be disposed of via a separate system. The composting toilet itself is reported to produce only a small amount of liquid wastes. However, the actual quantity is dependant on the particular design.

3.1.5.—Common Effluent Systems (CES)

Effluent is collected in a gravity fed or pressure reticulated system similar to a reticulated sewerage system.

Savings in pipe sizes, reduce grade, etc, may be achieved over a conventional sewerage system. However, this needs to be assessed on an individual system basis.

These systems are used mainly in areas already served by septic tanks and for sites where on site disposal is not possible. They are not generally economical if new septic tanks have to be installed. Odour and corrosion problems due to septicity of the effluent (particularly in manholes) are more severe than in a conventional sewerage system.

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The assessment may indicate that the proposal would be better served by a package treatment plant utilising the land suitable for effluent disposal, with the plant and disposal field being managed for all future owners of the development.

Note: Council will generally not consider taking control of such installations as a public utility.

3.1.6. Other Alternative Systems

Increasing awareness of environmental issues has seen significant changes to domestic effluent disposal in the last decade. There has been an increase in the construction of mound systems, including a variant that uses amended sand/soil composite for the purpose of phosphorous removal. This trend towards change in effluent disposal is likely to continue with new products coming on to the market. For example, greywater treatment and greywater diversion devices have been developed in response to the community's desire to conserve potable water resources. All new domestic wastewater treatment devices must be approved by the Director-General of NSW Health and are subject to the requirements of such an approval. Effluent distribution areas and reuse systems require only Council approval.

3.2. Applications - Roles and Responsibilities

The key stakeholders identified in the application process for approval to install or construct a sewage management facility are defined below. Definitions of other persons who may have a role to play in managing and implementing processes that lead to the effective and sustainable performance of on-site systems are given in AS/NZS 1547.

- i. The Regulatory Authority – reviews all stages of the process and ensures compliance with this policy and relevant guidelines and standards.
- ii. Site Evaluators and Soil Assessors – complete a site assessment and recommend a proposed treatment system(s) and application area(s) as well as identifying any constraints.
- iii. Designers and Installers – complete a detailed design and effluent disposal field layout plan. Install the system in accordance with the design and provide a certificate of compliance where required.
- iv. Property Owners – consent to the application and confirm which system is to be installed on the property; and ensure that the requirements for operation, maintenance and monitoring are met.

3.3. Information to be Submitted with Applications

Where [planning approval/development consent](#) is required, a development application [must be made as prescribed in the EPAA and in accordance with Council's Shoalhaven Local Environmental Plan 2014 and Shoalhaven Development Control Plans \(DCP\) 2014.](#)

An application for approval to install or construct a sewage management [facility-system must is to](#) accompany a development application and also be submitted for the construction or alteration of any on-site sewage [management](#) system. Documents to accompany an application are specified in Clause 26 of the Local Government (General) Regulation 2005. To view Clause 26 please refer to <http://www.legislation.nsw.gov.au> and browse for Regulations in force. The documents listed under Clause 26 of the Local Government (General) Regulation are to be used as a guide for applications to alter a sewage

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management [system/facility](#) and when the applicant declares in the application that the facility will remain on the premises for no more than 12 months.

In accordance with Clause 26 of the Local Government (General) Regulation 2005, the plan must be to scale and show the location of:

- a) The sewage management facility proposed to be installed or constructed on the premises; and
- b) Any related effluent application areas; and
- c) Any existing buildings or facilities and any environmentally sensitive areas located on land within 100 metres of the sewage management facility or related effluent application areas; and
- d) Any related drainage lines or pipework (whether natural or constructed).

In addition, an effluent disposal field layout plan that has been prepared by the system designer (which may be combined with the detail above to form one plan), is to be submitted with the application. The effluent disposal field layout plan must include the following details:

- A hydraulic balance of effluent application components (for example balance between pump size and number of sprinklers for an [aerated wastewater treatment system \(AWTS\)](#));
- All components of the system, including, but not limited to; the treatment tank, irrigation lines, the exact number of sprinklers proposed, absorption trenches, diverter valves, rotor valves and moisture sensors;
- Areas of land on which effluent will be applied;
- Reserve area(s);
- Detail of any proposed levelling of the site;
- Slope direction and gradient;
- Buffer distances; and
- Water courses and drainage lines (including stormwater diversion drains/berms).

3.3.1. Objective

To evaluate a proposed on-site sewage management [facility-system and its potential to ensure acceptable](#) impact on the environment, the information listed in subsections 3.5.2 and 3.5.3 must accompany any application for:

- Development (including new dwellings, dual occupancy and where there is either; a proposed change to the type of sewage management system; or there is a proposed increase in the occupational capacity of the building);
- Subdivision;
- Rezoning proposal; or
- A sewage management facility that proposes the use of alternative technology.

Upon request by Council, the information listed in subsections 3.35.2 and 3.35.3 may also be required for any application to install, construct or alter a sewage management [facilitysystem](#).

Any report required to be submitted to Council in accordance with these controls, any other SEPP or Deemed SEPP must be prepared by [a person or persons with appropriate qualifications in the field suitably qualified practicing person or persons](#).

3.3.2. Standard Dwellings/smaller Subdivision Applications

Applications for proposals involving less than 12 persons capacity or subdivisions involving the creation of 4 allotments or less in areas that are not environmentally sensitive, the are to be submitted with the following information. Please also refer to Chapter G10 of Shoalhaven DCP 2014 must be submitted with all sewage management applications:

a) Hydraulic estimation for the development;

b) Water balance calculation;

- Risk of run-off/percolation outside the site.
- Relevant calculations must be included within the report and conform to the requirements of "Environmental & Health Protection Guidelines" (1998).

b) Description of climate

Rainfall Median (5 Decile) figures shall be utilised. Actual figures from the nearest Bureau of Meteorology Recording Station should be used where possible.

Representative data for a number of suitable stations within the Shoalhaven are listed in Appendix 1.

d) Evapotranspiration – calculated utilising pan evaporation multiplied by the representative crop factor.

e) Flood potential – note the location of the projected 2050 1:20 year and 1:100 year flood level on the contour plan, if appropriate.

f) Details of soil suitability for the proposed method of application, including soil composition pH – many soils in the Shoalhaven have a low pH (are acidic). pH levels lower than 6.0 or 6.5 may limit the ability of plants to take up nitrogen and phosphorous.

g) Details of soils and geology (soil profile) – types and description of soil horizons are necessary. Sufficient bore holes shall be constructed so as to provide a representative picture of the soil horizons that exist across the site. Bore logs shall be submitted with the application and each soil horizon shall be classified according to its texture, eg sandy clay. See AS 1547 Section 4.1 A4.

h) Permeability – is to be determined using the procedure specified in AS/NZS 1547. The standard specifies the circumstance when the procedure is to be adopted.

i) Cation exchange capacity (CEC)/phosphorous sorption capacity (mg/kg) and an assessment made as to the suitability of the soil for removing pollutants like phosphorous. Refer to subsection 3.3.3 for further detail.

j) Sodicity assessment to determine the suitability of the soils to accept effluent in the long term. Test holes are to be used to specify groundwater depth. The estimated depth of water table in the vicinity may only be utilised to confirm depth within high permeable soils. Refer to subsection 3.3.3 for further detail.

k) Depth to bedrock is to be determined after field tests. The minimum soil depth to bedrock (of low strength or harder) or other confining layer is 1.2m (for absorption trenches) or 0.5 m (for application of secondary quality effluent with disinfection and from the base of a mound system).

l) Location of any bores within 100 m of the disposal field.

m) Topography and slope.

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n) **Details of compliance/performance of existing systems upon the development site and subdivided land including the residue.**

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o) **Identification of existing vegetation.**

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p) **Position of tanks and disposal areas** and their proximity to boundaries, rivers, watercourses, dwellings and recreation areas.

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q) The type of wastewater treatment and effluent application system together with details of the system including tanks, pumps, valves, timers etc.

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r) **Proposed wet weather storage facilities** and management procedures.

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s) **The treatment/construction of the application area** including materials, size and ground preparation.

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t) **Landscaping treatment of application areas** including plants, shrubs and ground cover.

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u) **Proposed maintenance contracts and servicing.**

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v) **Details outlining how the proposal complies with Part 2 of this policy.**

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A thorough assessment of the potential impact of nutrients and a site nutrient balance from the proposed development must therefore be undertaken. A soil chemical analysis is required to analyse the ability for phosphorus and nitrogen to be removed from the soil. Refer to subsection 3.3.3 for further detail.

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- Evapotranspiration — this must be calculated utilising pan evaporation multiplied by the representative crop factor.
- Flood potential — note the location of the projected 2050 1:20 year and 1:100 year flood level on the contour plan, if appropriate.
- Details of soil suitability for the proposed method of application, including soil composition pH — many soils in the Shoalhaven have a low pH (are acidic). pH levels lower than 6.0 or 6.5 may limit the ability of plants to take up nitrogen and phosphorous;
- Details of soils and geology (soil profile) — types and description of soil horizons are necessary. Sufficient bore holes shall be constructed so as to provide a representative picture of the soil horizons that exist across the site. Bore logs shall be submitted with the application and each soil horizon shall be classified according to its texture, eg sandy clay. See AS 1547 Section 4.1 A4.
- Permeability — is to be determined using the procedure specified in AS/NZS 1547. The standard specifies the circumstance when the procedure is to be adopted.
- Cation exchange capacity/phosphorous (CEC) sorption capacity (mg/kg) and an assessment made as to the suitability of the soil for removing pollutants like phosphorous. Refer to subsection 3.5.3 for further detail.
- Sodicty assessment to determine the suitability of the soils to accept effluent in the long term. Refer to subsection 3.5.3 for further detail. Test holes to specify groundwater depth. The estimated depth of water table in the vicinity may only be utilised to confirm depth within high permeable soils;
- d) Depth to bedrock to be determined after field tests. The minimum soil depth to bedrock (of low strength or harder) or other confining layer is 1.2m (for absorption trenches) or 0.5

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m (for application of secondary quality effluent with disinfection and from the base of a mound system);

- e) Location of any bores within 100 m of the disposal field;
- f) Topography and slope;
- g) Details of compliance/performance of existing dwellings upon the development site and subdivided land including the residue;
- h) Identification of existing vegetation;
- i) Position of tanks and disposal areas and their proximity to boundaries, rivers, watercourses, dwellings and recreation areas;
- j) The type of wastewater treatment and effluent application system together with details of the system including tanks, pumps, valves, timers etc;
- k) Proposed wet weather storage facilities and management procedures;
- l) The treatment/construction of the application area including materials, size and ground preparation;
- m) Landscaping treatment of application areas including plants, shrubs and ground cover;
- n) Proposed maintenance contracts and servicing;
- o) Details outlining how the proposal complies with Part 2 of this plan/policy.

A thorough assessment of the potential impact of nutrients and a site nutrient balance from the proposed development must therefore be undertaken. This will require a soil chemical analysis to analyse the ability for phosphorus and nitrogen to be removed from the soil. Refer to subsection 3.5.3 for further detail.

Should the site display extraordinary topographic, geological or other characteristics, or drain to a sensitive receiving environment (eg. [wetland](#)), Council may seek further information.

Specific details regarding the SEPP (Sydney Drinking Water Catchment) 2011 requirements must also be detailed in accordance with subsection 2.35.

3.3.3. Subdivision Applications for more than Four (4) Allotments, Dual Occupancy, Tourist or other Application to Install or Construct Sewage Management Facilities and Developments Capable of Housing an Equivalent Population of more than Twelve (12) Persons or any dwelling or subdivision application in an environmentally sensitive location. Refer to Council's Subdivisions Code (DCP 100) Larger dwelling/subdivision applications or other applications

Applications for subdivisions of more than 4 lots, tourist developments, [dual occupancy](#), developments of more than 12 person capacity and any development or subdivision application located in an environmentally sensitive area [must](#) be submitted with the following information. [Please also refer to Chapter G10 of Shoalhaven DCP 2014.](#)

- (a) **Costing analysis** - ~~Where~~ where a development proposal is located within close proximity (relative to the size of the development) of a reticulated sewerage system, costing analysis ~~shall~~ to be made. ~~The costing analysis is to that~~ compares the total cost to install, run and maintain the on-site effluent [disposal application](#) option compared to the

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cost of providing reticulated sewerage to the proposal (over a substantial period eg. 20 years).

- (b) **Proposed wastewater treatment and application system.**
- (c) **Details of compliance/performance of existing dwellings systems** upon the development site and subdivided land including the residue.
- (d) **Site information** including areas unsuitable for effluent application and possible area(s) suitable for effluent application purposes (display area in square metres (m²) and show setback distances).
- (e) **Details of soils and geology (soil profile)** - types and descriptions of soil horizons are necessary. Sufficient bore holes must are to be constructed so as to provide a representative picture of the soil horizons that exist across the site. Bore logs shall are to be submitted with the application and each soil horizon must be classified according to its texture, eg sandy clay. See AS/NZS 1547.
- (f) **Permeability** – is to be determined, when appropriate, using the recognised testing procedures specified in AS/NZS 1547. The standard specifies the circumstance when the procedures are to be adopted.
- (g) **Cation exchange capacity (CEC)/phosphorous (CEC) sorption capacity** and an assessment made as to the suitability of the soil for removing pollutants like such as phosphorous.

The CEC is the total number of cations a soil can retain on its adsorbent complex at a given pH, and is therefore a good measure of a soil's ability to retain specific pollutants. The most abundant cations in soil are calcium, magnesium, potassium and sodium, and hydrogen and aluminium in acid soils.

A CEC of 15cmol⁺/kg or less creates limitations for land application systems.

The capacity of a soil to absorb phosphorus is determined from its phosphorus sorption capacity. P sorption (mg/kg) is used to calculate the P balance using the procedure specified in the "Environment and Health Protection Guidelines (1998)". Phosphorus sorption by the soil is expected to occur up to about a quarter to a half of the phosphorus sorption capacity. Beyond this, leaching of phosphorus not utilised by vegetation uptake may occur. A soil having a phosphorus sorption ability of 50 years (in terms of mg P/g soil), based upon the expected phosphorus load, is required for land application areas. Rayment and Higginson (1992) provides a simple test to distinguish soils on the basis of low and high phosphorus retention.

- (h) **Sodicity** is an assessment made as to the suitability of the soils to accept effluent in the long term. Each soil horizon must be tested to determine if it is prone to dispersion. This testing shall must be quantitative and must be conducted as per Appendix F of AS/NZS 1547. Please note that as well as the classification of dispersive given in AS/NZS 1547, Northcote and Skene (1972) note that the exchangeable sodium percentage at which Australian soils tend to disperse is as low as 6 units (reported in Patterson (1993)). Northcote and Skene (1972) give the following classifications:

Non-Sodic	< 6.0	me %
Sodic	6–14	me %
Strongly Sodic	> 14	me %
- (i) **pH** – many soils in the Shoalhaven have a low pH (are acidic). pH levels lower than 6.0 or 6.5 may limit the ability of plants to take up nitrogen and phosphorous. Where acidic soils are encountered in a proposed effluent disposal area their pH should be raised so

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that it falls within the range of 6.0 to 7.5. The effect of acidic soils on infrastructure, such as concrete tanks, is also to be considered.

- (j) **Depth to ground water** – this shall will be determined after field tests or by local knowledge. For example, mottling of the soil can indicate the existence of a high water table from time to time.
- (k) **Depth to bedrock** – as determined after field tests or by general knowledge. Sometimes rock may be of extremely low strength and act like a soil, considerations such as depth to bedrock may be estimated to ensure adequate depth are achieved for a particular method of effluent disposal.
- (l) **Underlying geology and extent of fracturing** – based on field examination and relevant geology text.
General Information about soils and geology particular to the site should be noted, eg Hazelton, 1992.
- (m) **Topography** - Ground slope including contour plan – hatch areas greater than 12%. The contours must be at such intervals so as to allow a thorough assessment of the site. In many cases the 10 metre contours from the 1:25,000 topographical map will not be sufficient. The topography of the land surrounding the effluent disposal-application area should be evaluated for its potential to add stormwater runoff to the site.
- (n) **Flood potential** – note the location of the projected 2050 1:20 year and 1:100 year flood level on the contour plan, if appropriate.
- (o) **Erosion potential** – an assessment needs-to-be-made is required of the potential of the soils to erode. This shall-must include both an assessment of the soil's properties as they relate to erosion (see Hazelton, 1992) as well as landscape properties such as slope gradient and rainfall characteristics.
- (p) **Description of climate**
 - Rainfall Median (5 Decile) figures shall be utilised. Actual figures from the nearest Bureau of Meteorology Recording Station should be used where possible.
 - Representative data for a number of suitable stations within the Shoalhaven are listed in Appendix 1.
- (q) **Evapotranspiration** – this must be calculated utilising pan evaporation multiplied by the representative crop factor.
- (r) **Assessment of native vegetation** – Proximity of native vegetation to effluent disposal-application areas and areas downstream of the site (particularly riparian vegetation).
- (s) **Presence of environmentally sensitive vegetation types:**
 - Species which are sensitive to moisture or nutrients;
 - Threatened flora species;
 - Proximity of native vegetation to effluent disposal-application areas.
- (t) **Location of ground water recharge areas** – effluent disposal in such areas should be avoided.
 - Location, environment and impact at local ground water discharge points.
 - Depth to ground water.
 - Location of existing wells on site and adjacent to the site.

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- Current use of ground water.
- Current status of regional ground water (for example, is it potentially high yielding with low salinity – details may be obtained from NSW Office of Water).

(u) **Surface waters**

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- Proposed surface water management.
- Proximity
- [ProximityCurrent Use](#)
- Flow characteristics
- Presence of wetlands with conservation significance

(v) **Water Balance**

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- Risk of run-off/percolation outside the site.
- Relevant calculations must be included within the report and conform to the requirements of "Environmental & Health Protection Guidelines" (1998).

(w) **Effluent load** (related to population loads at 100% occupancy. Tourist facilities may demonstrate seasonal variations if appropriate)

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- Precipitation
- Evapotranspiration
- [pP](#)ercolation through to soil (if any)
- [R](#)un-off (if any)

Used to determine the size of effluent disposal areas and volume of wet weather storage.

(x) **Impact of Nutrients**

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The escape of nutrients from effluent disposal areas is a major concern as nutrients pose perhaps the biggest threat to our local waterways. The main nutrients of concern are nitrogen and phosphorous. Both of these nutrients are in high concentrations in treated effluent.

Nitrogen will be in a number of forms in effluent. Unless it can be removed, it will enter the ground water system and eventually surface waters. The main removal mechanisms are:

- Ammonia volatilisation (which is pH dependant and will be significantly less in acidic conditions – as is the case with many Shoalhaven soils).
- Denitrification
- Plant uptake

Removal, however is dependant upon the vegetation being removed from the site as, if the vegetation is cut and left on the irrigation area, it will merely cycle back to the soils and thus the ground water and surface waters. Calculations have shown that unless the vegetation is removed from the site (which is extremely difficult to police) more nitrogen will be applied to the "system" than can be removed and thus the siting of a development will need particular care to ensure nutrient pollution is not a problem.

Phosphorous will be removed from the effluent via:

- Chemical precipitation

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- Adsorption onto soil particles
- Plant uptake

A thorough assessment of the potential impact of nutrients and a site nutrient balance from the proposed development must therefore be undertaken. This will require a soil chemical analysis to analyse the ability for phosphorus and nitrogen to be removed from the soil.

A nutrient assessment is not required for proposed septic absorption and septic pumpout systems.

(y) **Details outlining how the proposal complies with Part 2 of this plan/policy.**

(z) **Wet Weather Storage**

Details of wet weather storage. Alternatively if wet weather storage is not provided, supporting documentation must be supplied which indicates the soils have the ability to remove pollutants without adverse impact on the receiving environment. Details of methods to calculate storage are obtained in "Environmental Guidelines for Industry - The Utilisation of Treated Effluent by Irrigation" EPA (1995).

(aa) **Any other relevant information**

An assessment as to the overall impact of the proposal both in the long and short term. In the case of rezoning, it must be proved that the cumulative long term impact of the proposal, plus other activities within the catchment, will not result in unacceptable changes to the receiving environment.

Should the site display extraordinary topographic, geological or other characteristics, or drain to a sensitive receiving environment (eg. Wetland) Council may seek further information.

Specific details regarding the SEPP (Sydney Drinking Water Catchment) 2011 requirements must also be detailed in accordance with subsection 2.3.

After all of the abovementioned issues have been taken into consideration a decision you may be made propose to include measures aimed at improving the quality of the site for the application of effluent. This may include importing suitable soil or other material for the effluent disposal application area due to the poor "in-situ" soils of the sensitivity of the receiving environment. Additionally, other ameliorative measures may be proposed.

The effectiveness of these such measures is difficult to quantify. In these situations, a much reduced scale of development or alternatively the "do nothing" option may be the best option for the receiving environment.

Where site works such as those noted above are proposed so as to minimise/make acceptable the proposal acceptable, such works should be installed at subdivision stage.

This will allow so that quality control may to be maximised (this being an important issue for their successful operation).

3.4. Climate data

Representative climate data for a number of suitable weather stations within the Shoalhaven are listed in Appendix 1.

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Should the site display extraordinary topographic, geological or other characteristics, or drain to a sensitive receiving environment (eg. Wetland) Council may seek further information.

Specific details regarding the SEPP (Sydney Drinking Water Catchment) 2011 requirements must also be detailed in accordance with subsection 2.5.

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3.4.3.5. Reuse of Effluent

To treat the waste as a resource, consideration should be given to any opportunities for reuse of treated effluent.

3.5.3.6. Other Effluent Disposal Codes and Requirements

From time to time site-specific studies are conducted to determine capability to accept development. These studies will examine all aspects of a site and its receiving environment and establish site-specific effluent disposal criteria (for example, Cabbage Tree Lane west of Nowra). These criteria may be outlined in further detail in a DCP, as conditions of development consent or listed as "restrictions-as-to-user" pursuant to Section 88B of the Conveyancing Act, 1919. These sources should be checked to determine if specific effluent disposal criteria apply to a parcel of land.

In March, 1998 changes were made to the sewage management systems in NSW. The Local Government Act 1993 and the Local Government (General) Regulation 2005 provides greater protection for the environment from pollution risks associated with on-site sewage management systems. The most significant change in the Regulations is that they now provide licensing and regular inspection of on-site sewage management systems. Shoalhaven City Council is administering these licensing and inspection requirements.

Other guidelines that may be relevant are outlined in the table below:

Guideline	Comment
Environmental and Health Protection Guidelines – On-site Sewage Management for Single Households, 1998	<p>The State Government guidelines produced in January 1998 as a guideline Document for all NSW Local Government Authorities. The guidelines specifically refer to single households only and represent the current 1998 standards as expressed by the NSW Department of Local Government, the former EPA, the former NSW Health, The former Department of Land and Water Conservation and the former Department of Urban Affairs and Planning.</p> <p>The document is contemporary and parallels the objectives, performance criteria and acceptable solutions of this DCP/LAP.</p> <p>Note: Should this document be reviewed or updated, the current document shall supersede previous releases as specified.</p>
Environmental Guidelines for Industry – The Utilisation of Treated Effluent by Irrigation (Draft) 1995	The EPA document provides guidelines to assist industry to design larger scale effluent disposal systems (eg tourist developments).

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	small package sewage treatment works etc.) in an ecologically sound manner.
AS/NZS 1547 On-site Domestic Wastewater Management	The Australian Standard provides detailed design criteria for on-site wastewater components and application areas. It provides technical guidance for the assessment of on-site sewage management components.
Interim NSW Guidelines for Management of Private Recycled Water Schemes	This guideline is intended to be used for planning a private recycled water scheme that will serve more than a single dwelling. Please refer to www.waterforlife.nsw.gov.au for more information.

3.6.3.7. Post Approval Effluent Treatment/Disposal Application Issues

3.6.4.3.7.1. Installation

- [Installation](#) must be considered and approved in conjunction with [Development/Sewage Management Applications](#).
- Effluent [disposal-application](#) systems are not to be used until the [waste disposal/effluent application](#) area/irrigation area has been inspected and approved by Council.

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3.6.2.3.7.2. Operation

Householders must have approval from Council to operate a system of sewage management and maintain the renewal of this approval. Please refer to Chapter 7 of the Local Government Act, 1993 for details on the legal requirements for operating a system of sewage management: www.legislation.nsw.gov.au. Further information on the requirements for approval to operate a system of sewage management is also provided in subsection 3.7.5 – [Council Monitoring](#).

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All systems must be serviced and maintained in accordance with the conditions of approval to install and operate a sewage management system. Good operation and use of the system is important for protecting the overall condition of the system.

All domestic effluent treatment/disposal systems rely on natural decomposer micro-organisms to break down the effluent. These organisms can be adversely affected by certain chemicals, such as bleaches, in some cleaning agents.

The washing powders and detergents used can also influence how an effluent disposal system works and the potential pollution which is generated. In this regard, Council encourages the use of readily biodegradable low sodium content washing powders and detergents.

Details on how to ensure that a domestic effluent treatment and disposal system works satisfactorily are contained in Council's [pamphlet brochures](#). It is important that stakeholders are aware of their responsibilities and have access to the necessary information on how their systems operate. Householders are encouraged to have a sound understanding of the operating requirements of the treatment system they are using. "[Septic Tanks – Hints for their Efficient Operation](#)".

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In relation to water conservation measures, Council supports and recommends the installation of the following devices and maintenance procedure:

- (a) Toilets to be fitted with a 6/3 litre dual flush system;
- (b) Devices to Australian Water Conservation Rating 'AA' or better, including shower flow restrictors, tap aerators, water-conserving washing machines.

3.6.3.3.7.3. Maintenance

(i) Conventional Septic Tanks and Absorption Trenches

Conventional septic tanks and absorption trenches are not maintenance free. Solids levels will build up in septic tanks over a number of years and accordingly these systems require regular "desludging" or "pump out". The frequency of desludging is dependant upon the number of people using the system but generally systems will be required to be desludged every three to eight years. Larger septic tanks are encouraged to minimise desludging intervals.

"Split systems" separate "black" and "grey" water for treatment and disposal. Traditional grey water systems will require regular maintenance of the greasetrap or preclarification (PC) pit to remove oils and greases that may block the sub-surface effluent disposal area.

After being in use for several months, the inside of absorption trenches will become coated with a layer of biological and chemical solids. This biofilm initially acts as a filter to aid in the treatment of effluent, but over time, will build up and tend to clog the system and impede absorption. Having multiple application areas so that the absorption trench may be rested while another one is used, will allow the clogging layer to dry and thin out. This rotation should occur every three to six months. Rotation of irrigation areas in the case of AWTS will also aid in nutrient removal from these systems, and permit the soil bacteria to recover.

After a period of years some absorption areas (particularly on dispersive soils) will "fail". Resting these areas or the application of gypsum may help, however in some situations the only feasible alternative is replacement of the effluent disposal area [or replacement of the system](#). Replacement of absorption trenches [\(or any other effluent disposal area\) or the type of treatment system](#) requires an application to Council for approval.

~~Council may require the submission of a maintenance report prepared by a suitably qualified person. The service must include a check and report on:~~

- ~~(a) sludge levels;~~
- ~~(b) scum levels;~~
- ~~(c) condition of the tank inlet and outlet;~~
- ~~(d) condition of the absorption trenches;~~
- ~~(e) a grease trap or preclarification pit if present;~~
- ~~(f) condition of the tank walls and lid;~~
- ~~(g) any indication of ponding effluent;~~
- ~~(h) the need for the tank to be pumped out.~~

(ii) AWTS

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It is emphasised that maintenance is essential for the satisfactory performance of aerated wastewater treatment systems (AWTS) and composting toilets. Accordingly specific requirements apply.

A permit to install an AWTS will only be granted on the condition that the installation is inspected every three months or as specified by NSW Health's conditions of accreditation, by a Council approved servicing agent at the householder's expense. A report must be prepared after each inspection, with a copy forwarded to Council. A service tag or similar recording arrangement must be implemented and must be dated and signed or stamped at each visit.

The servicing agent must be engaged to carry out necessary repair work to the installation as well as the routine cleaning and maintenance activities at the householder's expense. Any installation faults revealed in the three-monthly inspection must be repaired promptly.

Each three-monthly service must include a check on all mechanical, electrical and functioning parts of the AWTS including:

- (a) the chlorinator;
- (b) replenishment of the disinfectant;
- (c) all pumps;
- (d) the air blower, fan or air venturi;
- (e) the alarm system;
- (f) the slime growth on the filter media;
- (g) the operation of the sludge return system.

An annual service must also include a check on sludge accumulation in the septic tank (primary treatment tank) and the clarifier where appropriate to determine the need for desludging.

The following field tests are to be carried out by the service contractor at every service:

- (a) free residual chlorine using a suitable free residual chlorine measuring device;
- (b) pH from a sample taken from the irrigation chamber;
- (c) dissolved oxygen from a sample taken from the final aeration or stilling chamber, is a recommended option.

For systems which utilise the sewage treatment principle of activated sludge or contact aeration an additional field test must be carried out by the service contractor at least annually to determine if the accumulated sludge is bulking and as an indication that the aeration compartment/s require desludging. The sludge bulking test is commonly referred to as an SV30 Test.

Each quarterly service on an AWTS must involve checks and maintenance on the irrigation system and area. Such checks and maintenance must include:

- (a) Compliance with Council's original approval or later amendments issued by Council;

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- (b) Evidence of any irrigation area failure, runoff or pollutant escape from the site (eg very green grass heading in the direction of the boundary);
- (c) Any blocking of spray irrigation outlets;
- (d) Application of gypsum to the irrigation area at a rate of 0.2 kg per m², as required;
- (e) Removal of vegetative matter by the owner as a means to reduce the nutrient build up on the irrigation area;
- (f) A check on the accuracy of any ground moisture sensors, whether their location is appropriate and any servicing, maintenance or replacement of the ground moisture sensors so as to achieve accurate readings;
- (g) Rotation of effluent application areas.

In the event of a breakdown or malfunction, the service agent must be capable of effecting temporary repairs within 24 hours to ensure continued operation of the AWTS. This would necessitate the provision of adequate spare parts and temporary replacement blowers and irrigation pumps where repairs cannot be completed on site.

(iii) Composting Toilets

A permit to install a composting toilet will only be granted on the condition that the installation is inspected annually, or as specified by NSW Health's conditions of accreditation, by a Council approved servicing agent at the householder's expense. A report should be prepared after each inspection with a copy forwarded to Council. A service tag or similar recording arrangement must be implemented and is to be dated and signed or stamped at each visit.

The servicing agent must be engaged to carry out the necessary repair work to the installation as well as routine maintenance activities, at the householder's expense. Any installation or faults revealed in the annual inspection must be repaired promptly.

In the case of composting toilets the annual service must include a check on the following items:

- (a) Fan operation and maintenance;
- (b) Filters to air intakes;
- (c) Any heating elements;
- (d) Any rotation or turning of the compost;
- (e) Levels of composted material;
- (f) Presence of flies or other disease transmitting insects within the composting chamber;
- (g) That wastes have been allowed to compost for the period recommended for the type of unit;
- (h) That the permanent construction notice is still affixed within the closet compartment;
- (i) Any liquid discharge from the unit and accompanying disposal location;
- (j) The grey water disposal system including inspection of the disposal area.

3.7.4. Service Reporting

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(iv) — Service Reporting

Service reports are to be submitted to Council for each AWTS or composting toilet, or other system specified by NSW Health, within 14 days of the service date. The reports must be in the form stipulated by Council and be certified by the service technician.

Additionally service contractors must immediately report to Council:

- (a) All AWTS or composting toilet owners refusing a service or failing to renew a service contract;
- (b) All AWTS owners who have made alterations to the unit or irrigation system not in accordance with the original approval;
- (c) Details of any AWTS not in accordance with the NSW Health approval for such a unit.

3.7.5. Council Monitoring

(v) — Council Monitoring

An on-site sewage management system must be designed, installed and operated to ensure that the environmental and health performance standards set under the Local Government (General) Regulation 2005 are met and will continue to be met over the long term. These standards represent the minimum performance objectives for the operation of on-site sewage management systems.

An approval to operate a system of sewage management is issued to property owners or occupiers by Council under the Local Government Act, 1993. This approval is for a qualified time period. Approximately one month prior to the expiration date, Council writes to the property owner to request that they renew their Approval to Operate. It is the owner(s)/occupier(s) responsibility to lodge the application for renewal along with the prescribed fees.

It is also the responsibility of a new owner of a property to submit an application for Approval to Operate within 3 months from the purchase (or otherwise acquirement) of land on which any sewage management facilities are installed or constructed.

It is an offence to operate a system of sewage management without approval and a penalty notice applies for such an offence.

Following receipt of an application for Approval to Operate, Council completes an inspection and a decision is made on whether to grant a further Approval to Operate for a specified period. The result of the inspection is notified to the owner or occupier of the property where the system is operated.

Council works with householders, developers and service agents to ensure well managed and correctly performing on-site sewage systems, through correct installation, regular maintenance and monitoring. Good operation and use of the system is important for protecting the overall condition of the system.

Council will undertake routine inspections of all sewage management systems as part of a monitoring program carried out by Council's Development and Environmental Services Group. Any defect or non conformance with NSW Health accreditation of an on-site sewage management system may be reported by Council to NSW Health.

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Conditions for approval to operate are advised at the time the approval is granted. Conditions may be varied by Council at the time of renewal of that approval. In each case the conditions of approval set by Council are influenced by specific system design, use of the system, site conditions and vulnerability of surrounding areas.

Where a system fails to meet the prescribed performance standards, Council may take a number of actions. These include, but are not limited to: educating owners/occupiers; withholding the new operational approval; issuing requests to repair or upgrade; giving formal directions; issuing formal orders; issuing penalty notices (fines) and taking prosecution action in court.

Council may also complete an inspection of an on-site sewage management system as the result of a complaint received from a member of the community. It is the responsibility of all owner(s)/occupier(s) to ensure that all on-site systems are designed, installed and managed so that environmental nuisance/damage does not occur and there is no risk to public health from the operation of the system.

Any defect or non conformance with NSW Health accreditation of an on-site sewage management system may be reported by Council to NSW Health.

3.7.3.8. Further Advice

Should you need assistance regarding the preparation and/or submission of a development or drainage application please contact Council's [Development and Environmental Services](#) Planning, Environment and Development Group for further advice.

3.8.3.9. References and Further Reading

- (a) CROMER WC (2001) "An Improved Viral Die-Off Method for Estimating Setback Distances", Proceedings of On-site '01 Conference: Advancing On-site Wastewater Systems, University of New England Armidale, 15-27 September 2001", NSW Government, Sydney.
- (b) EPA (1998) "Environment and Health Protection Guidelines (On-site Sewage Management for Single Households)", NSW Government, Sydney.
- (c) EPA (1996) "Guidelines for On-Site Effluent Disposal for a Single Dwelling" (Draft), EPA, Sydney
- (d) EPA (1995) "Environmental Guidelines for Industry – The Utilisation of Treated Effluent by Irrigation" (Draft), EPA, Sydney
- (e) HAZELTON, P.A. (1992) "Soil Landscapes of the Kiama 1:100,000 Sheet", Department of Conservation and Land Management (incorporating the Soil Conservation Service of NSW), Sydney.
- (f) MARTENS, D.M. & CORREY, B. (1992) "On-site Domestic Aerobic Wastewater Treatment: Process and Design", Department of Geography, University of Sydney.
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- (i) NORTHCOTE, K.H. and SKENE, J.K.M. (1992) "Australian Soils with Saline and Sodic Properties", Soil Publication No. 27, CSIRO, Australia.
- (j) PATTERSON, R.A. (1993) "Effluent Disposal - The Sodium Factor", paper presented to Australian Institute of Environmental Health Conference.

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- (k) SHOALHAVEN CITY COUNCIL (1992) "Septic Tanks – Hints for the Efficient Operation"(Pamphlet)
- (l) STANDARDS AUSTRALIA (1999) "AS 1547 - On-Site Domestic Wastewater Management", Committee Draft No. 12.
- (m) SYDNEY CATCHMENT AUTHORITY (2011) "Developments in Sydney's Drinking Water Catchment. Water Quality Information Requirements".
- (n) WATER POLLUTION CONTROL FEDERATION (1990) "Natural Systems for Wastewater Treatment - Manual of Practice FD-16".

3.9.3.10. Implementation

The Development and Environmental Services Group has responsibility for implementation of this [plan/policy](#) through the development approval process.

3.10.3.11. Review

In accordance with S 165 (4) of the Local Government Act 1993, this [plan/policy](#) will be reviewed within one year of the election of every new Council.

3.11.3.12. Application of ESD Principles

Natural Capital - Refer to comments under each of the objectives of this [plan/policy](#).

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APPENDIX 1 – Evaporation / Rainfall Data (Source Bureau of Meteorology, 2007 and 2009)

Precipitation (mm) [median]														
Site No.	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
68217	Barrengharry (The Old School House)	78.4	83.4	76.2	79.2	50.8	71.2	54.2	41.8	49.8	54.4	88.8	68.0	1048.4
68229	Bendalong STP	78.1	86.7	102.9	76.5	92.8	92.0	62.4	46.3	54.2	79.7	87.5	68.2	1144.4
68003	Berry (Masonic Village)	99.8	108.7	116.2	98.1	79.8	90.2	60.0	46.2	59.1	70.3	77.6	87.4	1372.9
69121	Brooman (Carrisbrook)	110.0	112.0	99.0	77.0	80.0	98.8	49.0	34.0	60.1	69.7	97.6	72.5	1111.0
68083	Culburra Treatment Works	82.2	83.8	109.4	94.2	96.3	105.0	59.7	48.9	51.5	77.2	67.9	60.4	1119.0
68080	Greenwell Point Bowling Club	73.8	78.1	79.8	74.5	88.0	94.8	57.0	40.8	54.2	77.1	62.5	60.0	1034.8
68034	Jervis Bay (Point Perpendicular Lighthouse)	79.7	65.6	98.8	88.7	107.2	105.2	79.5	56.1	71.3	66.2	69.7	72.9	1168.4
68036	Kangaroo Valley (Main Road)	90.5	85.6	82.1	81.8	62.9	89.1	51.0	41.2	60.5	57.0	75.4	76.5	1200.8
69040	Kioloa Old Post Office	69.8	105.2	108.0	74.7	97.9	103.0	55.3	44.7	61.6	77.0	78.7	87.3	1178.4
69016	Milton (Sarah Claydon Village)	89.6	89.5	89.0	96.9	87.3	76.8	60.8	45.9	57.5	72.2	82.4	75.7	1176.2
68076	Nowra RAN Air Station	72.9	70.9	76.6	51.6	72.2	62.0	40.4	36.4	47.7	68.8	64.4	69.8	1135.2
68048	Nowra Treatment Works	71.6	71.3	68.2	59.8	60.2	65.1	45.9	33.9	42.8	60.3	52.0	63.7	981.5
68203	Sassafras (Ettrima)	90.9	119.9	105.3	62.8	36.9	115.6	47.3	69.8	43.5	65.2	65.5	117.9	1258.8
68204	Sussex Inlet Bowling Club	87.8	87.0	119.7	79.8	97.3	111.0	70.0	51.5	53.6	78.4	89.8	74.2	1221.9
69138	Ulladulla AWS	84.9	64.9	84.9	71.2	114.2	110.0	67.4	22.0	78.1	63.5	71.1	71.9	1101.8
69031	Ulladulla	73.1	80.6	88.5	77.1	77.0	117.0	52.3	70.7	43.0	75.2	67.2	92.1	1122.0
68222	Wandandian Post Office	100.6	96.2	55.2	59.3	82.6	56.9	51.8	34.0	59.4	57.7	91.3	72.0	1099.9
68218	Wattamolla (Griffiths)	130.4	213.4	153.8	128.4	76.5	89.0	60.6	42.3	73.2	70.7	107.7	88.2	1441.0
68190	Wattamolla (Tamol)	104.8	118.2	128.9	96.7	90.0	98.2	61.5	34.2	68.9	68.2	109.3	74.4	1411.8
68082	Yalwal	59.5	65.9	80.0	51.9	44.4	48.7	33.6	30.8	32.2	58.1	52.4	46.3	858.3

Evaporation Data – Shoalhaven Region (mm)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Nowra Median (RAN Air Station)	164.4	161.1	144.6	118.7	95.0	85.8	64.7	127.6	148.1	164.4	161.1	144.6	
Kangaroo Valley Median (Bendeeia Pondage)	138.3	116.3	94.8	73.6	44.7	35.8	46.1	76.4	89.0	122.9	131.7	155.7	

APPENDIX 2 – Definitions

Absorption – uptake of effluent or sullage or both into the soil.

Aerated waste treatment system (AWTS) – a system that uses the processes of aeration, clarification and disinfection to treat effluent from septic tanks to a standard that complies with the requirements of the relevant regulatory authorities.

Bedrock – any rock shelf under a site that is low strength or harder.

Black water – soil (toilet) wastes mixed with water.

Buffer distance – a distance measured in metres that represents the length of flow line between a wastewater disposal area and the high water mark of a waterbody or watercourse.

Cation exchange capacity – the ability of the soil to take up (bond with) ions such as sodium and phosphorous.

Composting toilet – A "waterless" effluent treatment system that treats toilet wastes by composting as a result of natural decomposer organisms in the composting chamber.

Common effluent systems – a system in which septic tank effluent in a gravity reticulation system is piped from a number of residences to a central treatment and/or application system.

Disinfection – The process by reducing all pathogenic and other harmful organisms to safe levels in secondary treated effluent. Processed effluent is only suitable for non-potable purposes such as irrigation.

Effluent – liquid discharge from a septic tank, sullage treatment farm or aerated wastewater treatment system.

Effluent application area – the area of land where it is intended to dispose of or apply effluent and any by-products of sewage from the management facility.

Equivalent population – for the purposes of this plan/policy the number of persons deemed to be accommodated must be calculated in accordance with the requirements of Part D of the Building Code of Australia (BCA) in conjunction with design requirements from the Department of Public Works "Manual of Practise (Sewer Design)" (1987).

Evapotranspiration – the loss of moisture to the atmosphere by direct evaporation and also by transpiration through a plant's leaves.

Grey water – sullage wastes (eg laundry, shower, kitchen, etc.) excluding toilet wastes.

Ground water – water which exists under the surface and within the soil.

Holding tank - a tank used for holding wastewater prior to pumping out, sometimes called a collection well.

Intermittent watercourse or stream – any stream, channel, canal or surface water drainage depression that forms a waterbody that flows during periods of rainfall or flooding.

Irrigation area – an area of prepared soil and aggregate through which a network of either perforated pipes is laid or spray irrigators are provided. Effluent is either sprayed or permitted to percolate into the soil bed and is removed primarily by evaporation and transpiration by plants. The area outlined within these guidelines incorporates sufficient area of land to provide for the resting of effluent disposal areas through a rotational schedule.

Infiltration – the ability of the soil to accept effluent and rainfall at the surface.

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Named River – any waterbody that has been specifically identified by Sydney Water or Shoalhaven City Council as being an important resource within a drinking water catchment.

Permeability – the ability of the soil to "absorb" and transmit effluent through its profile.

pH – the measure of acidity or alkalinity measured on a scale of 0 to 14 with 7 as a neutral point. From 0 to 7 is acid; from 7 to 14 is alkaline.

Phosphorous sorption capacity – the ability of the soil to take up phosphorous from the effluent.

Primary treatment – the separation of suspended material from wastewater by settlement and/or flotation in septic tanks, primary settling chamber, anaerobic process of treatment, prior to effluent discharge to either a secondary treatment process, or to a land –application system

Pump-out effluent system – a normal septic tank system, followed by a holding tank, used for the storage of effluent which is pumped out by a Council contractor at regular intervals with a specified number of services per year. This effluent is transferred to one of Council's sewage treatment works for further treatment and ultimate disposal.

Secondary treatment – means anaerobic and aerobic biological processing and settling or filtering of effluent received from a primary treatment unit. Effluent quality following secondary treatment is expected to be equal to or better than 20 mg/L five-day biochemical oxygen demand and 30mg/L suspended solids.

Septic tank – a tank used for the collection, primary settling and anaerobic treatment of household wastewater.

Sewage – includes any effluent of the kind referred to in paragraph (a) of the definition of waste in the dictionary to the Local Government Act 1993.

Sewage management facility – means:

- a. a human waste storage facility; or
- b. a waste treatment device intended to process sewage and includes any related/connected drain.

Sodicity – the level or presence of exchangeable sodium salts in the soil. Effluent contains high levels of sodium that may act to disperse clay particles, resulting in a significant reduction in the permeability of the soil.

Soil profile – the different layers (horizons) of different soil types with depth.

Split systems – black and grey water are split into separate waste streams at the source. Full on-site split systems dispose of both streams on-site but into separate disposal systems. Partial on-site split systems dispose of grey water on-site and rely on a cart-away system for the black water stream.

Waterbody

- (a) a natural water body, including
 - (i) a lake or lagoon either naturally formed or artificially modified; or
 - (ii) a river or stream, whether perennial or intermittent, flowing in a natural channel or bed or in a natural channel artificially modifying the course of the stream; or
 - (iii) tidal waters including any bay, estuary or inlet; or
- (a) an artificial waterbody, including any constructed waterway, canal, inlet, bay, channel, dam, pond or lake, but does not include a detention basin or other construction that is only intended to hold water intermittently.

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APPENDIX 3 – Acronyms and Abbreviations

AS/NZS Australian /New Zealand Standard

AWTS Aerated Waste Treatment System

BCA Building Code of Australia

CEC Cation Exchange Capacity

DCP Development Control Plan

“Environment and Health Protection Guidelines” (1998)

NSW Government (1998) “Environment & Health Protection Guidelines (On-Site Sewage Management for Single Households) NSW”

EPA NSW Environment Protection Authority

EPAA Environmental Planning & Assessment Act 1979

Regulations Environmental Planning & Assessment Regulations 2000

REP Regional Environmental Plan

SEPP State Environmental Planning Policy



SEWAGE MANAGEMENT STRATEGY

CL17.89 - Attachment 2

Adopted 7/9/99 – Reaffirmed 30/7/13 – MIN99.1880, MIN13.716 – Effective 7/9/99 – File 1092E

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INTRODUCTION

The Shoalhaven is well known for its magnificent waterways. One of the main reasons why people live and visit the area is because of the Shoalhaven's natural attributes. Accordingly, it is imperative that development is undertaken in a manner which protects and enhances these natural attributes. In particular, it is important to protect the natural waterways, including creeks, streams, rivers and lakes from pollution and more specially the potential pollution from effluent disposal.

In this regard, it is important to appreciate that many waterways suffer environmental degradations and public health risks as a result of small incremental measures in pollution from many different sources, and not necessarily from large individual point sources.

1 PART 1

1.1 BACKGROUND

On-site sewage management systems (OSMS) are used by approximately 250,000 households throughout NSW. There have been increasing concerns that these systems are failing to adequately treat and dispose of wastewater leading to pollution of waters and unhealthy conditions.

Within the Shoalhaven City there are approximately 8200 on-site sewage management systems which range from old septic systems to modern aerated systems. The number is increasing as more development occurs in the rural and semi-rural areas. With the local environment stressed and sensitive to further pollution, careful control of such systems is essential.

In line with Council's commitment to the long term protection of public health and the environment, and in response to changes in State Government legislation, Council has produced this On-site Sewage Management Systems - Implementation Strategy. The strategy covers the philosophy and operational requirements for the installation, monitoring, performance and regulation of on-site sewage management systems within the Shoalhaven City Local Government Area.

Council has developed an approvals and inspection regime aimed at achieving basic

environmental performance objectives while minimising cost to the community.

The purpose of the strategy is to provide a practical framework for the integrated management of on-site sewage management systems in the Shoalhaven City Council. It is essential that these systems are operated and maintained in accordance with relevant approvals, so as to mitigate any potential adverse public health and environmental impacts. It also outlines Council's plan to implement the legislative requirements.

1.2 AIMS

The aim of this strategy is to lay the framework for the identification, registration and assessment of all existing systems. Following this process an ongoing monitoring regime will be established depending on the level of potential hazard determined for each system. This assessment will be carried out then will require an approval for the "activity of sewage management" to ensure no adverse impact on the environment or the public. Further, all new applications will be assessed with consideration to:

The physical characteristics of the site;

- Protection of waters;
- Protection of ground water;
- Protection of land and natural vegetation;
- Prevention of any public health risk;
- Maintaining and enhancing community amenity;
- Ensuring conservation and reuse of water; and
- Ecologically sustainable development.

1.3 GOAL

Council's goal is to work together with householders, developers and service agents to ensure well managed and correct performing on-site sewage systems, through correct installation, regular maintenance and monitoring.

The specific goals of this Strategy are to:

- Specify the design and performance criteria Council will use to assess the suitability of an on-site sewage management system for

any particular location within the Shoalhaven City Council, in accordance with DCP 78.

- Establish complimentary links with existing development control legislation, environmental protection legislation, and adopted local and regional planning policies.
- Provide a reference point for Council to assess planning and development activities involving on-site management.
- Assist Council to prioritise resources for the efficient regulation and monitoring of on-site sewage management systems.
- Ensure that all stakeholders are aware of their roles and responsibilities in providing sustainable on-site sewage and wastewater management.
- Adopt a partnership approach with householders and service agents to support continual improvement of on-site sewage management technologies and performance.
- Establish a database of on-site sewage management systems within the Shoalhaven City Council.
- Assist in the initial development of local, individual and catchment based mechanisms to improve the effectiveness of on-site sewage management systems.

1.4 PROPERTIES TO WHICH THE PLAN APPLIES

Consistent with NSW sewage management regulatory provisions this strategy applies to all fixed sewage management systems. In the Shoalhaven City Council area that do not discharge directly to a public sewer and are not specifically regulated under a pollution control licence by the Environment Protection Authority. This includes a wide range of public, commercial and domestic sewage management facilities.

The following wastewater treatment devices are all these systems:

- Septic tank and absorption trenches.
- Septic tank to pump-out.
- Aerated wastewater treatment system.

- Composting toilets.
- Chemical toilets.
- Any other system which stores, treats, and/or disposes of sewage and wastewater on-site.

Legislation adopted by the State Government makes it compulsory for owners of property upon which sewage management systems are located, to apply to their local council for an operational approval by **1 July 1999**.

An assessment process will then be carried out and where systems are deemed to comply with given criteria an operational approval will be issued. An operational approval will normally contain conditions and be limited in time.

2 PART 2 - STRATEGY IMPLEMENTATION

2.1 INTEGRATION OF THE PLAN

This strategy is intended to integrate with Council's proposed Catchment Management Strategy, Council's proposed Stormwater Management Plan and Council's Water Quality Monitoring Program. The preparation of the Catchment Management Strategy for the entire area will provide the broader strategic documentation for the full range of environmental issues. The effluent disposal issue is one component of this broader framework. Until the Catchment Management Strategy is prepared, this strategy will provide the framework for the implementation of the legislative requirements.

2.2 IMPLEMENTATION

Strategy initiatives will be introduced according to public health and environmental priority, with due consideration given to the social impacts of such initiatives.

In the initial phases of implementation, the focus will be ensuring that all on-site sewage management systems are identified and to achieve the effective and safe operation of these systems.

The major administrative function of the strategy relates to the development and maintenance of an accurate database. In addition to the information already retained by Council, the average number of household

occupants, system design, operating constraints and performance history will be added as a result of the approvals process.

Many of these details are recorded prior to system installation where a detailed site assessment also applies.

Shoalhaven City Council is proposing a procedure described in Figure 1. The procedure will utilise information held by Council along with that supplied in application forms. A given set of criteria will be applied in order to categorise systems into potential risk categories. When insufficient information is available, further questionnaires may be required or alternatively a site audit.

The determination of these potential risk categories is an extremely important stage of the process as it will determine if further on-site auditing is required and the priority in which any audits will be conducted.

Shoalhaven City Council has identified some situations where field assessments are to be undertaken prior to issuing an operational approval. These include:

- Systems located within water catchments defined under the SEPP 58;
- Multiple developments upon a single allotment; and
- Systems with reticulated water supply and the property size is less than 1000 square metres.

The systems shall be prioritised into three potential risk categories - Low, Medium and High. This assessment will be merit based highlighting the aims as outlined previously in section 1.2.

Site audits shall only be necessary if insufficient information is available to satisfy the assessing officer that the property has a minimal potential to impact.

Council has developed a systematic flow diagram to assist staff and the community regarding the procedure that will be followed in receipting and assessing applications (see attachment 1).

The 'low risk' category has been created to cater for those systems where sufficient information is available to allow a desktop assessment only and so negate the need for

an on-site audit and possible further costs to the applicant.

Council is also mindful that properties with Sewage Management Facilities will change ownership and new owners may not be aware of operational and maintenance issues associated with such systems. A method of identifying and contacting new owners is currently being developed.

2.3 COMMUNITY EDUCATION PROGRAM

The success of this strategy is dependent upon the active participation of all affected parties. The strategy will be the subject of progressive revision based on community feedback and Council's assessment of strategy outcomes.

It is important that owners of OSMS understand how their system operates and the possible consequences of a faulty or mismanaged system. Older houses with on-site systems may have been bought and sold a number of times and current owners may not even know where the system is located.

The education of owners and operators of on-site sewage management systems is a priority of the reforms being introduced. Council will provide advice and additional information/support to householders, developers, and service agents as required. This may come in the form of systems operating and maintenance requirement brochures, the hosting of community workshops, direct mail outs and the promotion of Council programs through the media.

Relevant information provided may include:

- System design and treatment processes.
- Details on accredited systems.
- Soil, climate and vegetation information.
- Operation and maintenance requirements.
- Wastewater minimisation.
- Minimum performance standards.
- Regulatory requirements and obligations.
- Occupational health and safety requirements.

An important part of onsite sewage management is ensuring that stakeholders are aware of their responsibilities and have access

to enough information to undertake their responsibilities. Householders will be encouraged to have a sound understanding of the operating requirements of the treatment system they are using and should be aware of the need to adjust household activities accordingly. The level of knowledge required will greatly depend on the system design.

2.4 SUSTAINABILITY

The Local Government Act 1993, has been amended to include principles of ecological sustainable development. These principles impact directly on any consideration of an on-site sewage management system. The principles are detailed in the Dictionary of the Act but are, in essence, as follows:

- Conservation of biological diversity and ecological integrity - that this should be a fundamental consideration;
- Improved valuation, pricing and incentive mechanisms - that environmental factors should be included in the valuation of assets and the services such as:
 - the polluters pays;
 - consumers of goods and services should pay prices based on full life cycle of providing the goods and services;
- environmental goals should be pursued in the most cost-effective way, such as the use of economic incentives and market mechanisms;
- Inter-generational equity - the present generation should ensure that the environment is maintained or enhanced for the benefit of future generations;
- The Precautionary Principle - that if there are threats of serious environmental damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent degradation.

2.5 PERFORMANCE STANDARDS

The Council must prescribe performance standards when determining applications for approval to install or operate sewage management facilities. Minimum performance standards are specified by the Department of Local Government under the Local Government Act 1993, and the Council cannot

approve an application which will not comply with relevant regulations. These minimum performance standards are listed below.

An on-site sewage management system must be designed, installed and operated to ensure that the following environmental and health performance objectives will continue to be met over the long term:

- The prevention of the spread of disease by micro-organisms;
- The prevention of the spread of foul odours;
- The prevention of the contamination of water;
- The prevention of the degradation of soil and vegetation;
- The discouragement of insects and vermin;
- Ensuring that persons do not come into contact with untreated sewage or effluent in their ordinary activities on the premises concerned;
- The minimisation of adverse impacts on the amenity of the premises and surrounding lands;
- If appropriate, provision for the reuse of resources including nutrients, organic matter, and water.

The above matters represent the minimum performance objectives for the operation of on-site sewage management systems. Conditions for approval to operate may be varied by Council at the time of renewal of that approval. In each case the conditions of approval set by Council will be influenced by specific system design, site conditions, and vulnerability of surrounding areas.

3 PART 3 – APPLICABLE LEGISLATION AND POLICY

3.1 LOCAL GOVERNMENT ACT 1993

The Local Government (Approvals) Amendment (Sewage Management) Regulation 1998:

- Applies to all fixed sewage management systems that do not discharge directly to a public sewer and are not specifically

regulated under a pollution control licence by the Environmental Protection Authority;

- States that Council approval is required under section 68 of the Local Government Act for the installations, construction or alteration of a sewage management facility, as well as its ongoing operation;
- Specifies the information requirements to accompany an application to install or construct a sewage management system;
- Prescribes minimum performance standards for the aerated of a sewage management system;
- Allows Council to monitor system performance on a regular basis and to recover a renewal fee to cover reasonable costs. When inspections are required to Council is able to levy an inspection fee;
- Provides as a condition of development approval, that Council require the builders to provide a temporary closet (temporary sewage management facilities) on buildings/development sites;
- Clarifies the accreditation roles and responsibilities of NSW Health.

3.2 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

A number of planning instruments, under the Environmental Planning And Assessment Act 1979, are relevant to the operation and installation of OSMS. Specifically, State Environmental Planning Policy No 58 Protecting Sydney Water Supply, Shoalhaven City Council LEP 1985, and Shoalhaven City Council Development Control Plan No 78 – On-site Sewage Management.

3.3 STATE ENVIRONMENTAL PLANNING POLICY NO 58 – PROTECTING SYDNEY'S WATER SUPPLY

Pending the commencement of the Sydney Water Catchment Management Act 1998, this policy provides a concurrence or notification role for the Director-General of the Department of Urban Affairs and Planning in relation to development in the hydrological catchment that is likely to have an impact on water quality,

including the design and installation of on-site sewage management facilities.

State Environmental Planning Policy No 58 - Protecting Sydney's Water Supply applies to development applications lodged on or after 1 February 1999. Areas within Shoalhaven City to which this policy applies are the hydrological catchments of Kangaroo Valley.

The series of maps marked "State Environmental Planning Policy No 58 Protecting Sydney's Water Supply" indicate those areas to which the Policy applies and are deposited with the Department of Urban Affairs and Planning with copies distributed to councils of the local government areas to which this Policy applies.

In relation to any development or activity proposed to be carried out on land to which this Policy applies, a consent authority in exercising functions under Part 4 of the Act, a proponent or determining authority in exercising functions under Part 5 of the Act, and the Director-General in exercising functions under this Policy, must consider the following:

- a. whether the development or activity will have a neutral or beneficial effect on the water quality of rivers, streams or groundwater in the hydrological catchment.
- b. Whether the water quality management practices proposed to be carried out as part of the development or activity are sustainable over the long term.
- c. Whether the development or activity is compatible with relevant environmental objectives and water quality standards for the hydrological catchment when these objectives and standards are established by the Government.

3.4 SHOALHAVEN CITY COUNCIL LOCAL ENVIRONMENT PLAN 1985

Several sections of Shoalhaven City Council Local Environment Plan 1985, are directly relevant to the provision of sewage management services, on land to which the LEP applies. Sections under the following heading should be consulted.

- Utility services

- 7 (c) zones
- Concurrence in certain circumstances of the (former) Metropolitan Water, Sewage and Drainage Board (now Sydney Water Corporation)
- Protected areas

3.5 SHOALHAVEN CITY COUNCIL DEVELOPMENT CONTROL PLAN NO 78 – EFFLUENT DISPOSAL UNSEWERED AREAS

Shoalhaven City Council Development Control Plan No 78 is supplementary to both the Local Environment Plan and Local Environment Plan 1991. DCP 78 specifies detailed Council requirements relating to site assessment for:

- Effluent pump-out services for a dwelling house.
- Development controls for subdivision in unsewered areas.
- Controls for development in water supply catchment areas.
- Development controls of on-site effluent disposal.

Development Control Plan No 78 will be revised following the adoption of the On-Site Sewage Management Strategy to reflect the requirements of SEPP 58 and the operational requirements.

3.6 ENVIRONMENTAL & HEALTH PROTECTION GUIDELINES

In February 1998 the Department of Local Government in consultation with other relevant state government agencies produced the booklet entitled, *Environmental and Health Protection Guidelines: On-Site Sewage Management for Single Households*. The Guidelines address issues such as regulatory framework, the development of local sewage management strategies, administration and operational issues, site assessment principles and principles for selection and operation of on-site sewage management systems.

The Guidelines are specified guidelines for the purposes of clauses 75(3) and 95E of the Local Government (Approvals) Regulation 1993, as amended. Consequently the guidelines are a matter for consideration by the Council in

relation to applications for approval to install and approval to operate a sewage management system.

3.7 DEPARTMENT OF HEALTH – SYSTEM ACCREDITATION

NSW Health is responsible for accrediting human waste treatment devices that are intended to receive domestic wastewater or human waste. Accreditation is mandatory for commercially manufactured units and for commercially distributed standard designs of the types specified in the regulations. The facilities that must be subject to a certificate of accreditation are specified in clause 95A of the Local Government (Approvals) Amendment (Sewage Management) Regulation 1998.

The accreditation system provides a centralised assessment and testing procedure. A certificate of accreditation might include specific requirements for installation, operation and maintenance of the tested system. Such conditions become part of the council approval.

NSW Health accreditation is not required for prototype facilities installed for testing; for systems designed and constructed by owner/occupiers for their own premises; and for one off designed prepared for a particular premises. Council will assess such applications on a case by case basis.

3.8 AUSTRALIAN STANDARDS 1546.1 & 1547

AS1546.1 – On-site domestic wastewater treatment units – Part 1: Septic tanks

This Standard identifies performance requirements and performance criteria for septic tanks, specified technical means of compliance and provides test specifications that enable septic tanks to be manufactured to comply with the performance requirements and criteria.

AS1547 – Disposal system for effluent from domestic premises.

This standard sets out the requirements for the disposal systems for effluent from domestic premises comprising not more than five bedrooms. The following disposal systems are covered in this standard.

- a. Sub-surface systems. These systems may include:
 - An absorption area or trench
 - An evapotranspiration area or trench
 - A combined evapotranspiration-absorption area or trench
 - An absorption well
- b. Surface Irrigation. Effluent may be disposed of by surface irrigation provided it is of a satisfactory quality and the authorisation of the relevant regulatory authority.
- c. Collection Well. Effluent may be discharged into a watertight collection well for subsequent removal from the well with the authorisation of the relevant regulatory authority.

4 PART 4 – SEWAGE MANAGEMENT SYSTEMS – GENERAL

Council proposes to amend DCP 78 – On-site Sewage Management in conjunction with this strategy. The amended DCP will take account of the enhanced requirements outlined under this strategy. This DCP, in conjunction with the Orders regime identified later, will be a key mechanism in the implementation of this strategy.

4.1 SYSTEM DESIGN

The design and installation of a sewage management facility must comply with relevant Council Policy before an approval to operate will be issued. The owner shall be responsible for ensuring that the system installation complies with NSW Health accreditation guidelines and/or Council approval as appropriate.

4.2 PUMP OUT SYSTEMS

Where sewer is not available and site conditions will not allow the on-site disposal of effluent, pump-out systems will be the only alternative available to new developments. Such systems will only be approved where it can be demonstrated that such a service can be provided and the property owner enters into

an appropriate agreement for the regular removal of effluent.

Regular monitoring of such systems will take place via review of removal figures. Council will not, as a matter of normal course, require a regular compliance inspection nor renewal of operating approval.

In situations where complaints are received regarding specific systems, inspections may be carried out to determine the effectiveness of system management.

The effluent pump-out service provider may also issue defect notices where a system is not being maintained in a safe or healthy condition. The property owner must immediately address those matters identified in the "defect notice" to ensure the system is maintained in a sanitary condition.

4.2.1 AERATED WASTEWATER TREATMENT SYSTEM

Aerated wastewater treatment systems (eg "enviro-cycle" and "Clearwater") use sensitive biological agents, mechanical systems and chemical processes to produce a higher quality effluent than a standard septic tank. Aerated systems must be carefully managed and serviced to keep them working well and safely.

Service agents currently check the internal components, but do not always check the public health and environmental impacts of effluent disposal. Unlike standard septic systems, aerated systems often discharge effluent above ground where it can easily run off into adjoining land and waterways. Should the treatment process fail aerated systems can become serious sewage pollution hazard. Such failures are all too common, and may be caused by quite simple factors like using the wrong type of household cleaning agents, leaving the system unattended for extended periods, excess hydraulic loading or depletion of the treatment chemicals.

Landowners with aerated systems have to register for Council approval in the same way as other septic system owners, and aerated systems may also be subject to inspections and function checks.

4.3 TEMPORARY EXEMPTIONS FOR THE PURCHASERS OF LAND

A person who purchases or otherwise acquires land on which any sewage management facility is installed or constructed may operate that system without approval from Council for a period of 3 months after the date on which the land is transferred or otherwise conveyed to the person. If the person duly applies to Council for "Approval to Operate a Sewage Management System" within a period of 3 months after the date on which the land is transferred, the person may continue to operate that system without Council approval until the application is finally determined.

4.4 SEWER AVAILABILITY

When determining a development application Council must consider whether utility services are available, and if there is adequate capacity to support the proposed development.

Where a reticulated sewage system is within 75 metres of a proposed development, the development is to be connected:

- a. for **new developments**, where Shoalhaven City Council declares the sewer available
- b. for **existing developments**, where Shoalhaven City Council declares the sewer available.

For proposed developments where a reticulated sewer is not available, suitable arrangements for on-site sewage management will be specified by Council with reference to Development Control Plan No 78 – Effluent Disposal in Unsewered Areas.

4.5 SYSTEM DETAIL AND INSPECTIONS

System inspections may be required to ensure that on-site sewage management systems are installed and operated in accordance with the conditions specified in any Council approval

The Council may carry out inspections of any premises in relation to the operation of an on-site sewage management system which is the subject of an approval, in order to assess compliance with the approval.

If, as a result of an inspection, the Council requires any work to be carried out on the premises, the council will recover the

reasonable cost of the inspection from the owner or occupier of the premises. If no remedial action is required no fee is intended to be charged for such additional inspections.

4.6 COMPLAINTS ABOUT FAILING SYSTEMS

A member of the community may lodge a complaint with Council in stances where it is felt that a Sewage Management Facility is not operating in a satisfactory manner. Council will investigate such complaints irrespective of the assessed risk category.

It is the responsibility of the owner or occupier of the premises to ensure that on-site systems are designed, installed and managed so that environmental nuisance/damage does not occur, and there is not risk to public health from the operation of the system.

Owners should ensure that other occupiers of the premises are also aware of the systems operation and maintenance requirements. If a system is defective and cannot be corrected by prior operation and maintenance, householders should report this to Council so that immediate action can be taken to address the problem.

Councils have a range of powers to deal with on-site systems which are defective or which pose a threat to health or the environment.

Inspections and reporting ensures that records are kept up to date, and that problems with system failure do not persist over the long term. System failure is deemed to have occurred where systems fail to achieve prescribed performance standards resulting in adverse impacts on public health or the environment.

Where a system failure is identified, one or more of the following actions by Council be appropriate:

- Provide advise and educational material to the system owner and/or operator as to the best practice in operating and maintaining the sewage management system (this will be Council's preferred course of action).
- Order the premises to be connected to sewer (where available).
- Order the conversion of the system to pump-out where on-site disposal is failing and sewer is not available.

- Order the modification or upgrading of a system incorporating on-site effluent disposal where site conditions are suitable and no sewer is available.
- Order that the premises be maintained in a safe and healthy condition.

4.7 SERVICE AGENTS

Council will work with the local plumbing industry and Aerated Wastewater Treatment Systems (AWTS) service agents to minimise duplication of routine checks and cost to residents. Service agents and residents can assist Council by retaining all records of work carried out in relation to sewage management facilities, and producing that information as requested by Council.

Owners of ATS are required to enter into a maintenance contract with the supplier of the system, or other agent to ensure proper care and maintenance of both treatment and reuse systems is carried out. Quarterly service reports must be forwarded to the Council with by the maintenance contractor or the property owner.

Where AWTS service reporting is adequate and up to date Council may be require an inspection for the purposes of determining an Approval to Operate.

Council may be any time resolve to specify training and accreditation requirements for service agents to install or operate an on-site sewage management system. If service agents are given an inspection and certification role, the Council may also specify standard testing procedures, site management checks and reporting requirements, as well as procedures for lodging reports and for maintaining accreditation as a qualified person.

4.8 FEES AND CHARGES

To cover the cost of implementation of the strategy including inspection, education and administration, a fee will be charged for operating applications and inspections.

The fee for each application and inspection is an approved fee determined in accordance with the Local Government Act 1993. Unless otherwise regulated or determined, the approved fee is the amount specified in the

Council Management Plan for the period in which the inspection is carried out.

All relevant fees are shown in Council's Management Plan – Fees and Charges.

The current application fee has been based on the initial approval period set out in this strategy. It is intended to assess all the applications within a two year period, the systems, shall be prioritised into three potential risk categories- Low, Medium and High. This assessment will be merit based highlighting the aims as outlined previously in section 1.2.

Where a new sewage management system is subject of inspections in conjunction with a development application, no further inspection fees will be required for the purposes of determining the initial Approval to Operate.

4.9 WHAT HAPPENS WHERE A CONDITION OF THE APPROVAL HAS NOT BEEN COMPLIED WITH?

When an inspection finds that a condition of approval has not complied with, the Council is able to modify or revoke the approval (sections 108 and 109 of the Local Government Act 1993). This modification may include a variation of the inspection condition to vary the frequency of compliance inspections that may be carried out under the approval.

The Local Government (General) Amendment (Penalty Notice Offences) Regulation 2001, which commenced operation on 1 February 2002, has introduced a new penalty notice power for the existing offence of operating a system of sewage management otherwise than in accordance with the terms of an approval {section 627(3) Local Government Act 1993}. A penalty of 3 penalty units (currently \$330) is prescribed for the offence of operating a system of sewage management otherwise than in accordance with the terms of council approval.

Council highlights that compliance with administrative requirements and sewage management performance standards should be achieved through education and service support programs. Penalty notice and other enforcement powers should only be utilised when other approaches have failed.

4.10 WHAT HAPPENS IF I HAVEN'T OBTAINED AN ON-SITE SEWAGE MANAGEMENT SYSTEMS OPERATING APPROVAL?

An approval to operate a system of sewage management is an accountability measure between the landowner and the council. It also establishes performance standards and allows supervision fees to be charged.

The system of operating approvals is a more cost effective option than the alternative of universal mandatory inspections.

In cases where a landowner refuses to apply for approval, Council will consider alternate action rather than pursuing prosecution. One option is to implement a formal inspection process ie a full evidence based inspection not just a service check. If, as a result of an inspection the council considers action is necessary to rectify inadequate sewage facilities an order can be given. This triggers full cost recovery action under section 197 of the Act.

Failure to comply with a rectification order triggers penalty infringement notice (PIN) powers under the Local Government Act. Alternately, where a failing system is causing water pollution for the purposes of the Protection of the Environment (Operations) Act 1997 a \$600 PIN may be issued (if the council is so authorised) under that legislation.

If the inspection finds that sewage facilities comply with the installation approval (if there was one) and are being operated in accordance with the performance standards of the regulation then consultation with the landowner is appropriate. Council will emphasise the benefits of a sewage management approval, including reduced need for inspections and better management of cumulative impacts. Once the limited that the approval system will have on responsible sewage managers is understood a more cooperative response is likely.

In either case an order may be given under item 22 of the Orders Table and in terms pursuant to sections 139 – 141 to require the person to submit full details of the action they propose to take to meet the mandatory requirements and performance standards specified in the Regulation and other relevant

requirements specified by the council. The order may indicate that council approval to operate would satisfy the order requirement. Failure to comply with the order triggers power to issue a penalty infringement notice (pin amount is currently \$330).

The Local Government (General) Amendment (Penalty Notice Offences) Regulations 2001, which commenced operation on 1 February 2002, has introduced a new penalty notice power for the existing offence of operating a system of sewage management without prior council approval {section 626(3) Local Government Act 1993}. A penalty of 3 penalty units (currently \$330) is prescribed for the offence of operating a system of sewage management without prior council approval.

Council highlights that compliance with administrative requirements and sewage management performance standards should be achieved through education and service support programs. Penalty notice and other enforcement powers should only be utilised when other approaches have failed.

The use of prosecution powers should be a last resort to require a person to make an application for approval to operate an existing system of sewage management and should be reserved for cases of a flagrant and persistent refusal.

4.11 HOW ARE THE ON-SITE SEWAGE MANAGEMENT OPERATING STANDARD ENFORCED?

There are a number of options to enforce performance requirements for existing sewage management facilities. These include giving orders, issuing penalty notices and taking prosecution action in the court. These enforcement options may be used when an owner fails to comply with environment, health and amenity protection standards for on-site sewage management, does not have a current operating approval or fails to comply with conditions of an sewage management facilities. These include giving order, issuing penalty infringement notices and taking prosecution action in the court. These enforcement options may be used when an owner fails to comply with environment, health and amenity protection standards for on-site sewage management, does not have a current

operating approval or fails to comply with conditions of an approval.

4.12 ENFORCEMENT

Adequate powers exist under the provisions of the Local Government Act 1993, to ensure compliance with this strategy and to require OSMS to obtain an approval to operate, and these systems to be maintained to an acceptable standard.

Council shall:

- required action to be taken to bring a sewage system into compliance with relevant standards or requirements (Order No 5);
- require owners or operators to do or refrain from doing such things to prevent environmental damage or repair environmental damage (Order No 11);
- cease conducting an activity on a premises (such as operating on OSMS) where the activity is or may constitute a threat to public health or safety (Order No 15);
- require action to maintain a premises in a healthy condition (Order No 21);
- control waste on premises where the waste is not being dealt with satisfactorily (Order No 22);
- require the connection to a public sewer where the sewer is within 75 metres (Order No 24);
- require owners or operators to use or not to use a human waste storage facility (Order No 25);
- require compliance with an approval (Order No 30) where considered necessary.

5 PART 5 – NEW SYSTEMS

5.1 SITE ASSESSMENT

Shoalhaven City Council Development Control Plan No 78 – Effluent Disposal in Unsewered Areas, provides detailed criteria for the assessment of site suitability with respect to the installation and operation of on-site sewage management facilities on lands within the Shoalhaven City. The DCP 78 also refers to the guidelines from the Department of Public

Health, and to be amended the SEPP 58 considerations for approval.

5.2 APPLICATIONS FOR APPROVAL TO INSTALL

All new on-site sewage management systems require:

- a. approval to **install**, under Section 68 of the Local Government Act 1993;
- b. approval to **install**, under the Environmental Planning and Assessment Act 1979 for any sewage management facility involving on-site disposal of effluent;
- c. approval to **operate** under Section 68 of the Local Government Act 1993.

In determining each application Council will consider the relevant requirements of the legislation, policies and standards outlined in Part A, Section 3 of this document.

An application for approval to install or construct a sewage management facility needs to include:

- a. **Plan A** plan to scale showing the location of the sewage management facility proposed to be installed on the premises; any related effluent application areas; other facilities and buildings; any environmentally sensitive areas in close proximity to the system or effluent disposal area.
- b. **Specifications** The application must be accompanied by full specifications of the sewage management facility proposed to be installed or constructed on the premises concerned.
- c. **Site assessment** Refer to Development Control Plan 78 – Effluent Disposal in Unsewered Areas.
- d. **Statement** The application must be accompanied by a statement of the number of persons proposed to reside on the premises, and such other factors as are relevant to the capacity of the proposed system.
- e. **Operation and Maintenance** The application must be accompanied by details of the operation and maintenance standards for the proposed system; the

proposed operation, maintenance and servicing arrangements intended to meet those standards; the action to be taken in the event of a system breakdown.

Council will make a determination as to the:

- Viability of the proposal with regard to system design and site suitability.
- Cumulative public health and environmental impacts within the area or wider catchment.
- Expectations for future development in the area.

Installation or work cannot commence until a Construction Certificate has been issued for the works.

5.3 COMMISSIONING A NEW SYSTEM

Prior to commissioning a new system of sewage management Council must firstly notify the applicant in writing that it is satisfied the facility has been installed, constructed or altered in substantial accordance with the approval. Following a satisfactory final inspection a completion certificate will be issued to the property owner.

5.4 TEMPORARY SYSTEMS

Temporary systems at building sites need to be provided at the rate of one toilet for every 20 persons (or part thereof) to be catered for on the site at any given time. Where practicable the sewage management facility will contain a standard flushing toilet that connects directly to sewer. Each sewage management shall be:

- accredited by NSW Health or otherwise approved by Council;
- installed and maintained in accordance with manufacturers specifications;
- Operated in a manner which does not pose risks to public health;
- Operated in a manner which does not degrade the environment or decrease environmental amenity.

6 PART 6 – EXISTING SYSTEMS

6.1 APPROVAL TO OPERATE A SEWAGE MANAGEMENT SYSTEM

An approval to operate an existing Sewage Management System will be required from Council. The approval will specify the performance standards of the regulation and provides a mechanism for accountability to the Council concerning compliance with basic requirements (conditions) aimed at the protection for public health and the environment.

- For existing systems an application for an “Approval to Operate a Sewage Management System” **must be lodged with Council before 30 June 1999.**
- The owner of the premises must be the applicant.
- The operator (persons occupying the premises) must be nominated on the application form.
- Once an application is lodged, the applicant is entitled to continue to operate the system until the application is finally determined by Council.
- The Approval to Operate is renewable and may be subject to an inspection. A renewal application will be subject to the payment of a fee when it is submitted.

Any conditions that will enhance operational performance of a system will be advised at the time the Approval to Operate is granted. For all Approvals to Operate conditions will relate to:

- a. Responsibilities of the user of the system.
- b. Conditions of any certificate of accreditation issued by NSW Health.
- c. Evidence of compliance with the relevant performance standards.
- d. Any details on the servicing and maintenance of the system by qualified service agents.

All Approvals to Operate will be for a qualified time period.

For On-Site Disposal Systems, the interim approval will be issued until Council completes an “approved-assessment” of the individual system. After that initial approval-assessment, the approval period may extend to five years depending on the system and how it is being operated, the characteristics of the catchment in which it is located and any program for improvement or enhancement of the systems within that catchment. The duration of each approval will after the “initial period” be limited to 5 years.

Operators of Pump-out systems (under contract with Shoalhaven Water) will be assessed as outlined with the flow diagram. The systems may be subject to inspections on a “complaints” basis, on receipt of unsatisfactory service reports (for AWTs) or when notified by Shoalhaven Water (or its contractor) of defects in a pump-out system.

Approximately one month prior to the expiration date Council will write to the property owner and request that they renew their Approval to Operate (an application form will be provided). On receipt of that application, and contingent on any necessary inspection by Council, a decision will be made whether to grant a further Approval to Operate for a further specified period. It is the owners responsibility to lodge the completed application for renewal of the Approval to Operate along with the prescribed application fee.

The owner of any system operating after 30 June 1999 for which an application has not been submitted will be operating the system unlawfully. Under the provisions of Section 626 (3) of the Local Government Act 1993 it is an offence to install, construct, alter and to operate a system of sewage management without an approval from Council. A penalty applies for such an offence.

7 PART 7 – STRATEGY EVALUATION

7.1 ASSESSMENT OF GOALS AND OBJECTIVES

As identified in the background comments at the start of this strategy, this is an implementation strategy. This strategy by itself may not achieve immense improvements in

water quality and environmental and public health.

The success of this strategy will be measured in terms of its effectiveness in achieving the goals and objectives identified in Part A, Section 2. Results of inspections of systems undertaken and monitoring undertaken through Council's water quality monitoring program will show where deficiencies and strengths are, and where changes may need to be made. New technologies may emerge that will prompt Council to re-evaluate the preferred management approach.

The data established through this strategy – number, distribution and types of systems being operated and the effectiveness of the operation of the systems – will be essential to Council's Catchment Management Strategy.

In order to adequately measure the outcomes of an environmental management strategy, selected indicators must be identified and monitored from the outset of the process. Where possible Council will maintain and develop programs in cooperation with relevant authorities, State agencies, and community group, to monitor the impact of on-site sewage management on environs within Shoalhaven City.

Significant benefits will be realised where environmental assessment and monitoring activities can be conducted on a regional or catchment basis.

The integration of this regulation based strategy with the Water Quality Monitoring Program, the Catchment Management Strategy and the Stormwater Management Plan will be crucial to achieving a coordinated response to environmental and public health improvements within the Shoalhaven City Council area.

7.2 STRATEGY REVIEW

Although it will be necessary to integrate this strategy with the other initiatives listed above, it is proposed that a major review of this strategy will be undertaken every four years.

As system improvements occur, knowledge and performance data becomes available, Council's database will expand. This information combined with stakeholder feedback relating to the implementation of

sewage management programs will be used to determine future land use strategies and policy direction. The suitability of any area for on-site effluent disposal will continue to be assessed at the earliest possible stage of planning.

At the first review of the strategy, sufficient information and data is expected to be available to assist in developing a catchment and system enhancement system that requires individual and localised mechanisms, funding solution and education programs.

8 DEFINITIONS

Absorption – uptake of effluent or sullage or both into the soil

Aerated Waste Treatment System – a system that uses the processes of aeration, clarification and disinfection to treat effluent from septic tanks to a standard that complies with the requirements of the relevant regulatory authorities.

AWTS – see Aerated Wastewater Treatment System

Bedrock – and rock or shelf that exists under a site that is low strength or harder.

Black Water – soil (toilet) wastes mixed with water.

Buffer Distance – a distance measured in metres that represents the length of flow line between a wastewater reuse/disposal area and the high water mark of a water body or watercourse.

Cation Exchange Capacity – the ability of the soil to take up (bond with) ions such as sodium and phosphorous.

Composting Toilet – a ‘waterless’ effluent treatment system that treats toilet wastes by composting as a result of natural decomposer organisms in the composting chamber.

Common Effluent Disposal System – a system in which septic tank effluent in a gravity reticulation system is piped from a number of residences to a central treatment and/or application system.

Effluent – liquid discharge from a septic tank, sullage treatment farm or aerated wastewater treatment system.

EPA – New South Wales Environment Protection Authority.

Equivalent Population – for the purposes of the development control plan the number of persons accommodated must be calculated in accordance with the requirements of Part D of the Building Code of Australia.

Evapotranspiration – the loss of moisture to the atmosphere by direction evaporation and also by transpiration through a plant's leaves.

Grey Water – Sullage wastes (eg laundry, shower, kitchen, etc) excluding toilet wastes.

Ground water – water which exists under the lands' surface and within the soil.

Intermittent Watercourse or Stream – any stream, channel, canal or surface water drainage depression that forms a waterbody during periods of rainfall or flooding.

Irrigation Area – an area of prepared soil and aggregate through which a network of either perforated pipes is laid, or spray irrigators are provided. Effluent is either sprayed or permitted to percolate into the soil bed and is removed primarily by evaporation and transpiration by plants. The area outlined within these guidelines incorporates sufficient are of land to provide for the resting of effluent disposal areas through a rotational schedule.

Infiltration – the ability of the soil to accept effluent at the surface.

Permeability – the ability of the soil to “absorb” and transmit effluent through its profile.

PH – the measure of acidity or alkalinity measured on a scale of 0 to 14 with 7 as a neutral point. From 0 to 7 is acid from 7 to 14 is alkaline.

Phosphorous Sorption Capacity – the ability of the soil to take up phosphorous from the effluent.

Prescribed Waters – any water body that has been specifically identified by Sydney Water or Shoalhaven City Council as being an important resource within a drinking water catchment.

Pump-out Effluent Systems – a normal septic tank system followed by another tank used for the storage of effluent which is pumped out by a Council contractor at regular intervals with a specified number of services per year. This effluent is transferred to one of Council's

sewage treatment works for further treatment and ultimate disposal.

Septic tanks – a tank used for the collection, primary settling and anaerobic treatment of household wastewater.

Sewage – includes any effluent of the kind referred to in paragraph (a) of the definition of waste in the dictionary to the Local Government Act 1993.

Sewage Management Facility – means:

- a. human waste storage facility, or
- b. a waste treatment device intended to process sewage and includes and related/connected drain.

Sodicity – the level or presence of exchangeable sodium salts in the soil. Effluent contains high levels of sodium which may act to disperse clay particles, resulting in a significant reduction in the soil permeability.

Soil Profile – the different layers (horizons) of different soil types with depth.

Split Systems – these systems split black and grey water into separate waste streams at the source. Full on-site split systems dispose of both of the streams on-site but into separate disposal systems. Partial on-site split systems dispose of grey water in-site and rely on a cart-away system for the black water stream.

Water Body –

- a. a natural water body includes:
 - (i) a lake or lagoon either naturally formed or artificially modified; or
 - (ii) a river or stream, whether perennial or intermittent, flowing in a natural channel or bed or in a natural channel artificially modifying the course of the stream; or
 - (iii) tidal waters including any bay, estuary or inlet; or
- b. an artificial water body, including any constructed waterway, canal, inlet, bay, channel, dam, pond or lake, but does not include a detention basin or other construction that is only intended to hold water intermittently.

REFERENCES FOR FURTHER READING

Environmental & Health Protection Guidelines (On-Site Sewage Management for Single Households) NSW. FEB 1998 (NSW GOV)

EPA (ENVIRONMENTAL PROTECTION AUTHORITY) (1995) "Environmental Guidelines for Industry - The Utilisation of Treated Effluent for Irrigation" EPA Sydney.

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PATTERSON Robert A (1993) "Effluent Disposal - The Sodium Factor" Paper presented to Australian Institute of Environmental Health 1993 National Conference.

STANDARDS AUSTRALIA (1994) "Australian Standard 1547 - Disposal Systems for Effluent from Domestic Premises"

WPCF (WATER POLLUTION CONTROL FEDERATION) (1990) "Natural Systems for Wastewater Treatment - Manual of Practice FD-16".

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