

PLANNING for UTILITIES INFRASTRUCTURE

Wyong Shire Council

The Planning for UTILITIES INFRASTRUCTURE section of Wyong Shire Council's Settlement Strategy primarily considers the servicing and infrastructure for our water supply and sewerage network; stormwater management, waste management and public utility undertakings. The chapter also identifies ways in which Key Objective 7 of our Community Strategic Plan can be achieved:

'Information communication technology will be consistent with world's best practice and adaptive to technological advances across all sectors.'



Establishing our Vision

What do we want to achieve?

Planning for new urban communities needs to consider provision of utilities infrastructure, including water supply, sewer, stormwater, waste management and public utilities, including electricity substations and broadband provisions. Land sited for future urban development should be located so that it can be adequately serviced with water, sewer, stormwater disposal and public utilities.

Development Servicing Plans for water supply and sewer infrastructure should identify ultimate demand for new and expanding urban communities in order to prioritise the release of new urban areas. Progressive staging should also ensure that the prioritising of release of the new urban areas mimics the prioritising, where possible, of other elements such as transport demands. In addition, urban infill development also needs to take into account existing utility infrastructure capacities. Infill development potential may be limited depending on the capacity of any utility item.

Key Documents for Planning for UTILITIES INFRASTRUCTURE:

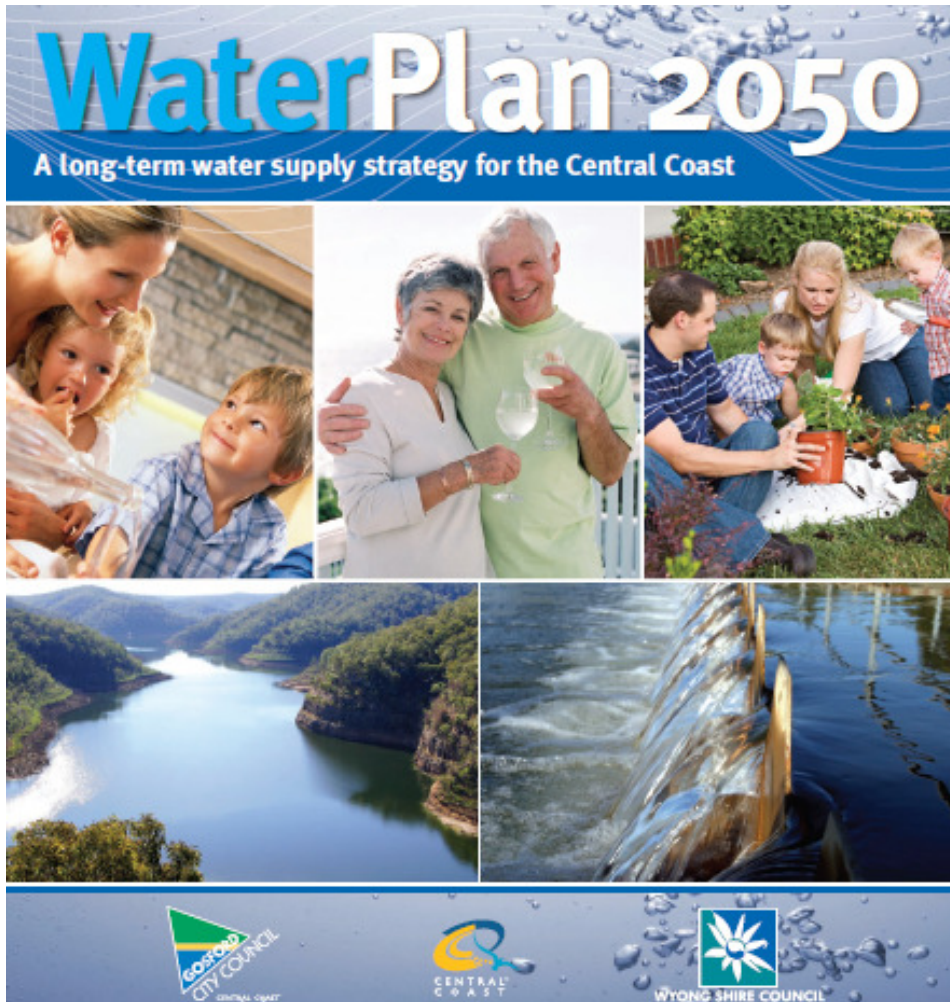
Community Strategic Plan (2011)	Community Plan (2008)
Central Coast Regional Strategy (2008)	NSW State Plan (2010)
North Wyong Shire Structure Plan (2010)	WaterPlan 2050
Development Servicing Plans	Estuary Management Plan
Wyong DCP 2013 Chapter – Controls for Site Waste Management	

What legislation do we need to consider?

Environmental Planning and Assessment Act 1979	SEPP (Infrastructure) 2007
Protection of the Environment Operations Act 1997	Water Management Act 2000
Central Coast Water Corporation Act 2006	Local Government Act 1993
Electricity Supply Act 1995	Telecommunications Act 1997
Waste Avoidance and Resource Recovery Act 2001	
Water Sharing Plan for the Central Coast Unregulated Water Sources 2009	
Water Sharing Plan for the Jiliby Creek Water Source 2003	
Water Sharing Plan for the Kulnura Mangrove Mountain Groundwater Sources 2003	
Coastal Protection and Other Legislation Amendment Act 2010	

Planning for
WATER SUPPLY

HOW DO WE SUSTAINABLY CATER FOR OUR RESIDENTS, BUSINESS AND VISITOR POPULATION, IN TERMS OF WATER SUPPLY REQUIREMENTS?



Background to OUR WATER SUPPLY:

The water supply for the Central Coast has historically been provided by Gosford and Wyong Council's with joint coordination of the shared major water supply infrastructure. In early 2011, the Council's resolved to form the Central Coast Water Corporation (CCWC), declared under the *Central Coast Water Corporation Act 2006*. Establishment activities are currently underway for the CCWC, jointly owned by Gosford and Wyong Council's.

Water for the Central Coast is largely supplied by various streams, including Mangrove Creek, Mooney Creek, Ourimbah Creek, Jilliby Creek and Wyong River. Water is stored in three dams: Mangrove, Mardi and Mooney Mooney. During times of water shortage when storages are depleted the supply is supplemented with groundwater sources and transfers from the Hunter Water Corporation. Community awareness of the need for water conservation is improving, as significant emphasis has been placed on educating the community on water efficient practices over the last decade.

Council supplies water to approximately 60,000 properties via a network of 180km trunk and 1,120km reticulated water mains, with the wider Central Coast water supply system servicing about 300,000 people. The water supply strategy has been developed to service a population of about 450,000.

Table 15: Summary of Water Supply Infrastructure (Extracted from the State of the Shire Report, 2009/2010)

Water Supply Population	150,000
Residential Properties Served	60,000
Non-Residential Properties Served	3,150
Volume of Water Treated	12,000 ML/year
Dams	1 (3 in total on Central Coast)
Water Treatment Plants	1 – Mardi
Water Pumping Stations	20
Water Reservoirs	22
Length of Water Mains	180km trunk, 1,120km reticulated

Drinking Water Catchments

A drinking water catchment (catchment) is an area where water is collected by the natural landscape, with rain flowing to a dam, creek, river etc or seeping into the groundwater system. Together, the combined catchment area of the Central Coast drinking water system is approximately 727km². The drinking water catchment areas within Wyong LGA are Wyong River, Porters Creek, Mardi Dam, and Ourimbah Creek (see Figure below).

Figure 6: Our Water Network

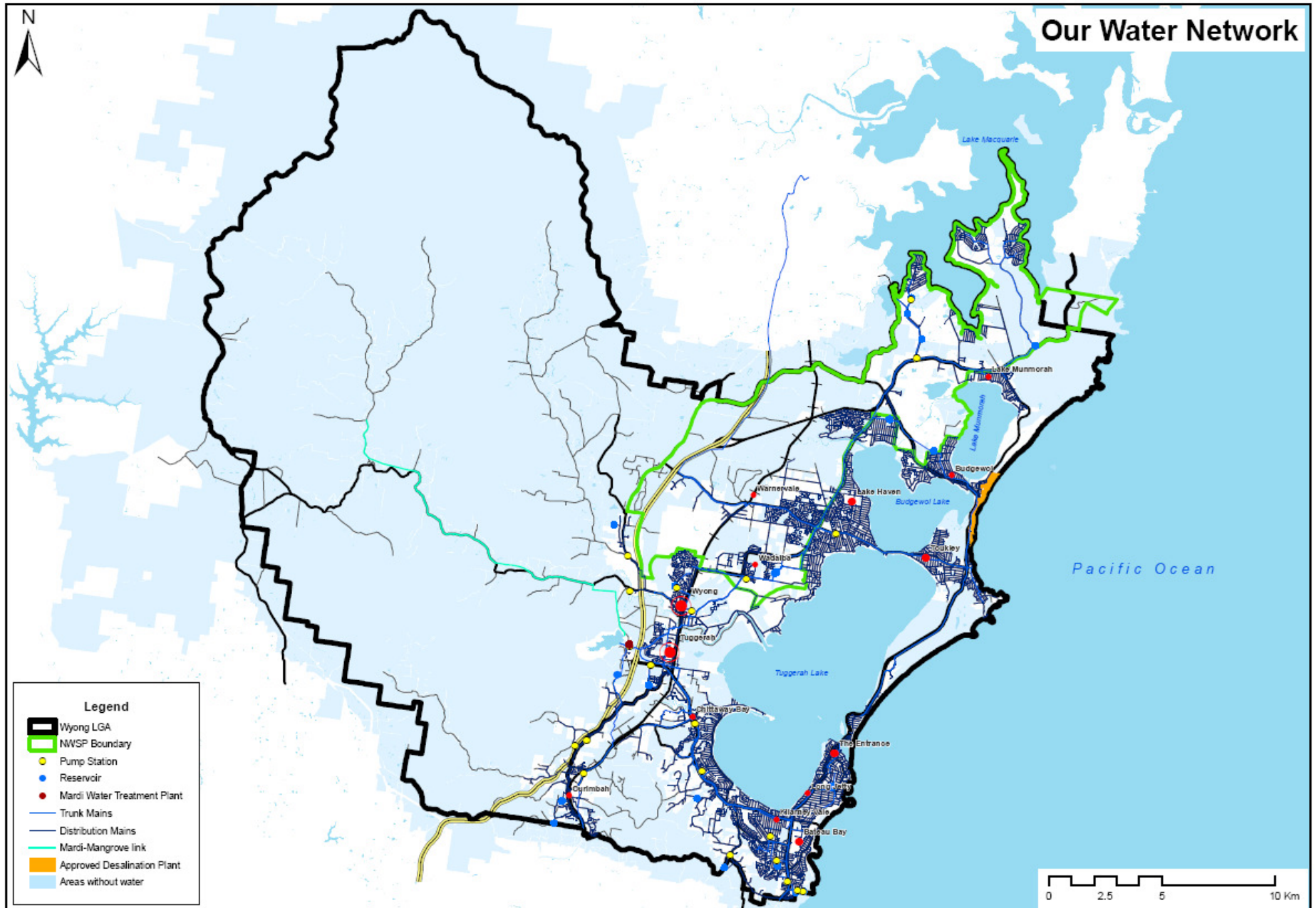
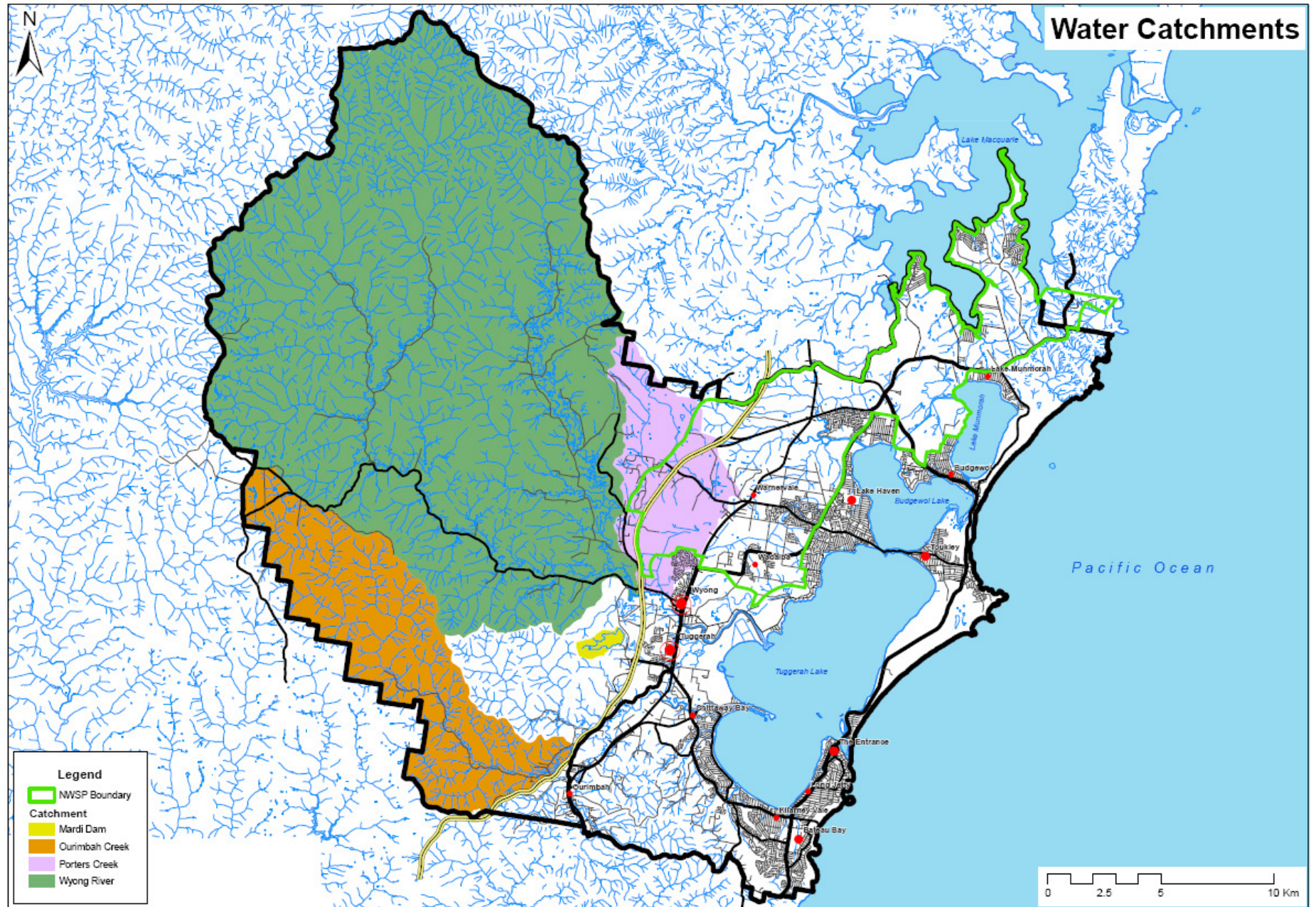


Figure 7: Our Water Catchments



Issues**What are the current and foreseeable issues that are, and will continue to impact, upon WATER SUPPLY?****Ageing Infrastructure**

A large number of Council's water assets are ageing significantly. Water assets are subject to life cycle management through Council's Asset Management Plans, which identify renewal and refurbishment requirements based on condition assessment and risk of failure and form the basis for future expenditure. Effective asset management reduces whole-of-life costs, while maintaining agreed levels of service, over an assets useful life.

Projected Population Growth

In 2008, the then Department of Planning released the Central Coast Regional Strategy (CCRS), which ultimately requires Gosford City and Wyong Shire Councils to provide for an additional 100,000 residents over a 25 year period. In addition, the Department of Planning & Infrastructure's (DP&I) North Wyong Shire Structure Plan (NWSSP) identifies new future urban release areas for Wyong LGA, which previously have not been considered in the long-term water supply planning for the LGA. In summary, Wyong LGA will need to plan for an additional population of 70,000 residents to 2031.

Private ownership of water catchment land

Managing and protecting our catchments is a key process in ensuring water quality, as activities on the land may affect water quality and quantity downstream. There is a need to preserve and maintain water quality in designated water supply catchments, to protect potable drinking water quality. Given that our drinking water catchments are largely in private ownership, the system is reliant on appropriate land use zoning restrictions and landholder management for protection of water quality.

Drought and Securing Long-Term Water Supply

While there is no universal definition of drought, it is generally described as a prolonged, abnormally dry period where there is not enough water to meet user's normal needs (Bureau of Meteorology, 2010). The Central Coast has recently experienced the worst drought on record, with 15 years of below average rainfall and stream flows. This drought, together with population growth over the same period, resulted in the region's water supply capacity being significantly strained.

As well as a reduction in the supply of potable drinking water, the effects of prolonged drought are widespread. Drought impacts upon the sustainability of agriculture and rural resource sectors; can contribute to adverse social impacts within communities reliant upon agriculture as a source of income; results in declining water quality; and increases the probability of wind erosion and bushfire. Drought also has environmental impacts on aquatic ecosystems, groundwater systems, aquifers, and fauna and flora in general.

Climate Change

Climate model projections indicate an increasing risk of below average rainfall for southern and eastern mainland Australia, higher temperatures and evaporation, and below average runoff. In particular there is a significant projected increase in frequency of extremely hot and dry years (CSIRO, 2010). Effects of climate change may exacerbate drought conditions and result in further strain on the water supply to Wyong LGA.

Planning for our Population**How do we plan for improvements to our WATER SUPPLY?****Securing Long-term Water Supply - Water Plan 2050**

Concerns over the long-term supply of water for the Central Coast, and the enhancement of environmental flow requirements, triggered the release of *Water Plan 2050* in 2007. *Water Plan 2050* is the Central Coast's long-term strategy to secure and sustain our water supply system over the next 40 years. *Water Plan 2050* was developed taking into account population growth, hydrology, climate change projections, and enhanced environmental flow provisions. It contains actions which aim to enhance the region's current supply; promote the efficient use of water; and develop additional future water supply sources.

A major action of *Water Plan 2050* is the completion of the Mardi to Mangrove Link enabling more water to be harvested and stored in Mangrove Creek dam during wet periods. In addition, significant investments have been made in recent years to reduce the demand on the town water supply through the provision of rainwater tanks, recycled treated effluent, stormwater harvesting and demand management programs. The plan can be adjusted in response to climate change, population growth, achievement of demand management performance, as well as consideration of emerging technologies.

Development Servicing Plans

Planning for water supply provision for our residents is undertaken through Development Servicing Plans (DSPs). DSPs relate to the provision of water and sewer infrastructure and detail water and sewer infrastructure requirements for new Greenfield developments or redevelopment of infill areas. More specifically, DSPs allow Council to obtain monetary contributions for the provision of water and sewerage infrastructure to assist in meeting the required levels of service for the community. At present, Wyong LGA has 12 DSPs.

The CCRS requires Wyong LGA accommodate an additional 39,500 dwellings within nominated town centres and urban release areas. While the timing of new urban release areas largely relates to the orderly and economic development of land, consideration is given to the availability and schedule of programmed works for the provision of new infrastructure. Notwithstanding the above, further detailed planning is required to ensure that DSPs are aligned to the release of additional Greenfield areas and to ensure that our existing network has the capacity to provide for the projected population growth.

Desalination

In response to the drought, Gosford and Wyong Councils developed a range of contingency plans to supplement the Central Coast's water supply. In 2007, Council obtained development consent for a permanent desalination plant, as a contingency measure should it be required in a future period of water shortage to secure the supply. The proposed development includes a desalination plant located at the Toukley sewage treatment plant site, a water intake system and water pumping station at Lakes Beach, and extensive water infrastructure mains to transfer water between these facilities.

In 2009, Council resolved to rezone the vegetated areas of the Budgewoi Coastal Zone (including Lakes Beach), from existing 6(a) (Open Space and Recreation Zone) to E2 - Environmental Conservation, as part of the Comprehensive Local Environmental Plan process. However, this rezoning will be restricted to the revegetated areas and excludes operational areas such as the surf club and car park. This rezoning will therefore exclude the land proposed for the water intake system and pumping station at Lakes Beach.

Management of Land Use Conflicts in Drinking Water Catchments

Management of land use conflicts within our catchments is essential to ensure that our drinking water catchments are protected from inappropriate development. Due to the majority of land within the catchment being privately owned, the CCWC does not have direct control over land management and development in the water catchments. Therefore, protection of the water catchment is largely reliant on the Wyong LEP 2013, Council policy and landholder management. Strategic land use planning in the catchments is essential to ensure new development is not harmful to water quality. Planning for our catchment areas needs to limit the density of dwellings and on-site effluent management systems within drinking water catchments and maintain vegetated corridors and buffer zones along waterways.

What are other Government Authorities currently doing?

Central Coast Regional Strategy (CCRS)

To protect our drinking water catchments, the CCRS prevents urban development west of the F3 Freeway. Council will continue to support the State Government in delineating areas of inappropriate development in the vicinity of our drinking water catchment areas.

The Standard Instrument, Wyong LEP 2013 and Wyong DCP 2013

What provisions can be incorporated into our Planning Instruments that will help facilitate our vision for improvements to our WATER SUPPLY network?

Wyong Local Environmental Plan 2013

The following measures can be incorporated into Wyong LEP 2013 to improve our planning for our water supply network:

- Planning and development provisions contained in the Wyong LEP 2013 will determine what activities are permissible in water catchment areas. By implementing suitable land uses we are able to better protect water quality and lessen any potential threats to the water supply. Significant water storage facilities are to be acknowledged with an SP2 Infrastructure (Water Supply Systems) zone under Wyong LEP 2013.
- Inclusion of model local clause Part 6 Urban Release Areas, in particular Clause 6.2 – Public Utility Undertakings which aims to ensure that any public utility infrastructure essential for the proposed development, including water servicing and infrastructure, is made available, prior to the commencement of development in these areas.
- Inclusion of model local clause for water catchment areas, which addresses the need to control development within a prescribed drinking water catchment that provides potable water to the community. Utilising this model local clause will assist in controlling development within the drinking water catchment. Future amendment to this clause may be required to include consideration of location of bore fields.

Wyong DCP 2013: Development Controls for Wyong Shire

The following measures can be incorporated into Wyong DCP 2013 to improve our planning for our water supply network:

- Model local clause 6.3 - Development Control Plan, requires a DCP be prepared prior to development of urban release areas, ensuring that development occurs in a logical and cost-effective manner, and only after a DCP chapter has been prepared. DCP chapters would include a staging plan for the timely release of land that provides for necessary infrastructure and sequencing, including water servicing infrastructure.
- In addition, in a future amendment of Wyong DCP 2013 a chapter should be included, titled Water Supply Catchment Area Development, in order to ensure that development within our drinking water catchments will not threaten our water supply.

Key Planning Considerations:

Key Planning Considerations for our WATER SUPPLY:

- *Secure and deliver a sustainable long-term water supply system to accommodate the Central Coast's existing and future water needs.*
- *Optimise the use of existing services and infrastructure and promote the efficient provision of services and infrastructure in the future.*
- *Incorporate water-efficiency initiatives into both planning strategies and development controls, including water tanks, non-potable water usage, water use and Water Sensitive Urban Design.*
- *Encourage industrial/commercial use of recycled water.*

Strategic Actions and Local Initiatives
WATER SUPPLY

#	ACTIONS	RESPONSIBLE AUTHORITY	IMPLEMENTATION					COMMUNITY STRATEGIC PLAN	CENTRAL COAST REGIONAL STRATEGY
			LEP		DCP		Other		
			2013	Am.	2013	Am.			
IN01	Incorporate model local clause Part 6, including the suite of associated sub-clauses within Wyong LEP 2013 and support its objectives in the possible future development of DCP chapters for each of the nominated urban release areas identified by the NWSSP, where appropriate. The DCP chapter will, amongst other things, provide a staging plan for the timely and efficient release of urban land that makes provision for necessary infrastructure and sequencing, including water servicing, sewer and drainage infrastructure.	WSC	X			X		<p>There are no CSP actions that apply to this component.</p> <p>8.1: The local water authority and councils are to implement WaterPlan 2050, having regard to the dwelling and employment capacity targets in the Regional Strategy for the next 25 years and take part in future reviews of these capacity targets. (IN1)</p> <p>8.4: Require new residential development to comply with BASIX targets to reduce water consumption and energy consumption.</p> <p>8.5: Ensure that LEPs seek to improve existing land use conflicts within defined water catchment areas.</p> <p>8.6: At each review of the Regional Strategy an assessment is to be carried out on the capacity of the water supply system to adequately meet forecast housing and employment capacity targets. (IN3)</p> <p>9.3: Councils are to identify suitably-located and appropriately zoned land for new water supply, wastewater treatment and recycling, energy and waste avoidance, and resource recovery infrastructure, to support growth in major regional centres and major towns.</p>	
IN02	Incorporate model local clause within Wyong LEP 2013 – Drinking Water Catchments to control development within prescribed drinking water catchments providing potable water to the community.	WSC	X						
IN03	Ensure land use zoning in the relevant area of Lakes/Budgewoi Beach continues to enable the intake system and pumping station associated with the Toukley Desalination Plant (approved but yet to be constructed).	WSC	X						
IN04	Amend Wyong DCP 2013 to incorporate a chapter on Water Supply Catchment Area Development, in order to ensure appropriate development in areas within our drinking water supply catchments.	WSC				X			
IN05	Assist the Department of Planning & Infrastructure in reviewing the CCRS, to consider population and dwelling targets in line with current and projected water supply issues for the Central Coast and Wyong LGA.	WSC/SG					X		
IN06	Continue to implement WaterPlan 2050 and its associated strategies aligned with its key focus areas: enhancing the existing water supply system; using water efficiently; and accessing additional sources of water.	WSC/CCWC					X		
IN07	Develop or amend DSPs to ensure new future urban release areas identified by the NWSSP are considered, in terms of the time of water supply and servicing.	WSC/CCWC					X		
IN08	Develop an appropriate approach to assess proposals in the vicinity of bore fields to protect the water source but not unnecessarily constrain development.	WSC/CCWC		X					

**Planning for
SEWERAGE INFRASTRUCTURE**

HOW DO WE SUSTAINABLY CATER FOR OUR RESIDENTS, BUSINESS AND VISITOR POPULATION, IN TERMS OF OUR SEWERAGE INFRASTRUCTURE?



Background to OUR SEWERAGE INFRASTRUCTURE and SERVICING:

Like water supply infrastructure and servicing, sewerage infrastructure and servicing for the Central Coast has historically been provided individually by Gosford and Wyong Council. In early 2011, Gosford and Wyong Councils resolved to form the Central Coast Water Corporation (CCWC), declared under the *Central Coast Water Corporation Act 2006*. Establishment activities are currently underway for the CCWC to provide water and wastewater asset management and regulatory activities from 2014.

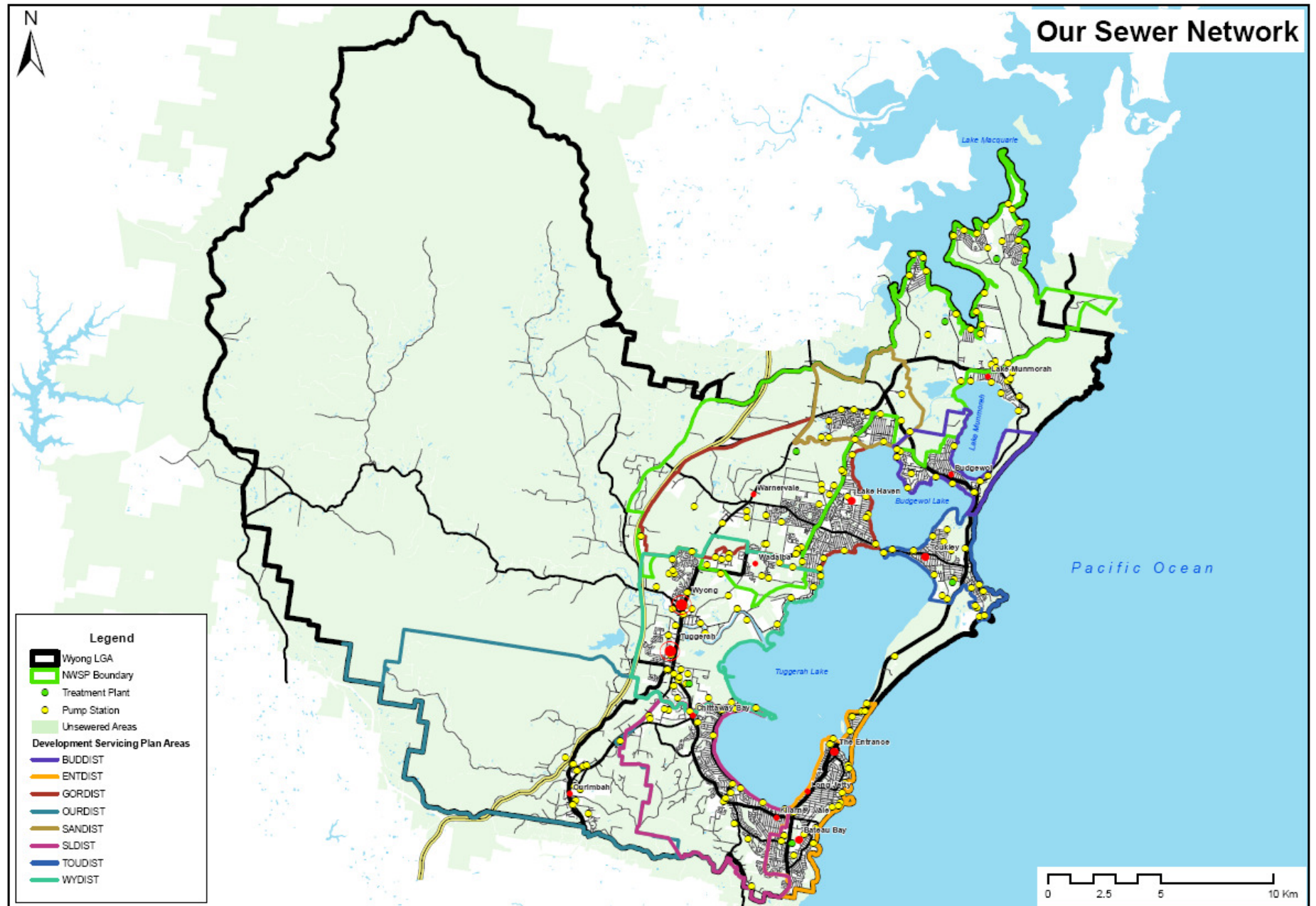
Sewerage infrastructure and servicing within Wyong LGA is provided to a permanent population of over 150,000 within 59,000 properties. Council currently collects approximately 12,000 ML of wastewater annually, via a network of 1,200km of reticulated mains and 142 pumping stations. At present, Council operates 6 sewerage treatment plants (STPs), with the following current and projected capacities:

STP	Capacity		Areas Served
	Current	Projected	
Gwandalan	12,000	18,000	Gwandalan, Summerland Pt
Manning Park	12,000	36,000	Manning Park, Chain Valley Bay, Elizabeth Bay and Lake Munmorah
Charmhaven	40,000	120,000	Charmhaven, San Remo, Blue Haven, Doyalson, Warnervale
Wyong South	48,000	64,000	Wyong, North Wyong, Tuggerah, Ourimbah, Chittaway, Tacoma, Berkeley Vale, Tumby Umbi
Bateau Bay	58,000	65,000	Bateau Bay, The Entrance, The Entrance North, Long Jetty, Blue Bay, Toowoona Bay, Killarney Vale
Toukley	41,400	50,000	Toukley, Gorokan, Kanwal, Tuggerawong, Wyongah, Buff Point, Norah Head, Noraville

Table 16: Sewerage Treatment Plants (State of the Shire Report, 2009/2010)

Our STPs process sewage to secondary treatment stage for sewage effluent discharged to the ocean at the Wonga Point and Norah Head ocean outfalls; or higher level tertiary treatment for effluent reused for non potable uses. Council is increasingly reusing treated effluent for non-potable uses, such as watering golf courses and playing fields and for construction activities. The remaining grit, screenings and dewatered sewage sludge are transported to Buttonderry Waste Management Facility, where the sludge is mixed with river sand, soil, ash, etc and made into a soil conditioner for sale to wholesale nurseries in the Gosford to Newcastle area, and for Council operational uses.

Figure 8: Our Sewer Network



Issues**What are the current and foreseeable issues that are, and will continue to impact, upon our SEWERAGE INFRASTRUCTURE?****Ageing Infrastructure**

A large number of Council's sewerage assets are ageing significantly. Sewerage assets are subject to life cycle management through Council's Asset Management Plans, which identify renewal and refurbishment requirements based on condition assessment and risk of failure and form the basis for future expenditure. Effective asset management reduces whole-of-life costs, while maintaining agreed levels of service, over an assets useful life.

Projected Population Growth

Council is required to ensure that the provision of sewerage infrastructure is undertaken in consideration of the DP&I's projected population growth for the Wyong LGA of 70,000 additional residents by 2031, within existing centres and new urban release areas. In this regard, consideration will need to be given to the augmentation of our existing network and the provision of new infrastructure in areas which do not possess the capacity to support an increased population.

On-site Sewerage Management

A number of rural areas, such as Jilliby, Glenning Valley and Tumbi Umbi; and the Dooralong, Yarramalong and Ourimbah Valleys are not serviced by the reticulated sewer network. In these locations, effluent disposal is undertaken by on-site sewerage management systems. It is known that use of on-site sewerage management systems can impact upon both environmental and public health if not adequately managed.

Odour Impacts

Council's six STPs have the potential to be a source of pollution. A number of Council's STPs are located within existing and future urban release areas and may result in odour impacts for current and projected, surrounding populations. Council will manage odour impacts arising from STP operation through appropriate land use controls.

Liquid trade waste

Liquid trade waste is all liquid waste, other than domestic sewage, including waste from industrial, business and commercial premises; community premises; saleyards, racecourses, stables and kennels; and septic tank waste. As economic activity increases within the LGA, so does the amount of liquid trade waste that is discharged into our sewerage system. This needs to be considered when planning for employment lands.

Flooding

A number of sewerage pump stations within Wyong LGA are located in flood prone areas and become inundated during flood events. For example, during the June 2007 flood

event, catchments for 6 pumping stations in the southern Tuggerah Lakes were inundated and out of operation for up to 4 days. 4 of these pump stations (at Chittaway Point) were out of operation for longer than 4 days. This has negative health impacts on the population and environment, and damages essential infrastructure, requiring increased maintenance and repairs. This issue needs to be addressed in future planning for upgrades and/or relocation of these facilities in the future.

Climate Change

Increased severe storm, storm surge and rainfall events; and anticipated sea level rise associated with climate change will have negative impacts on sewer pump stations due to the low-lying nature of a large amount of Council's sewerage infrastructure. Impacts may include inundation of sewerage pump station wells, valve pits and sewer mains, either permanently or during flood events. This may require upgrading, raising and/or relocation of these facilities. Our sewerage infrastructure may also experience more exposure damage, requiring changes to exposure classification for existing and future structures.

The *Coastal Protection and Other Legislation Amendment Act 2010* requires that any sewerage infrastructure within the coastal foreshore that is to be upgraded/replaced, must take into account sea level rise and coastal impact zones. Essentially this means relocation of the infrastructure to higher ground at substantial expense. This may affect many coastal foreshore assets in the future. In addition, climate change is expected to generate altered weather patterns in terms of wind, which may alter odour impacts from our STPs. If prevailing winds are altered, the direction that the odours travel will also be altered, which may affect areas that have previously not experienced odour issues.

Changing Groundwater Levels

Groundwater levels can rise as land is cleared and irrigated. Rising groundwater levels can impact on sewer infrastructure through additional system infiltration, and changes to groundwater composition such as increasing salinity.

Planning for our Population**How do we plan for improvements to our SEWERAGE INFRASTRUCTURE?****Development Servicing Plans**

Planning for the provision of sewerage infrastructure is undertaken in the form of Development Servicing Plans (DSPs). Refer to the general discussion on DSPs in the "Planning for WATER SUPPLY" section of this chapter. The CCRS requires the Wyong LGA to accommodate an additional 39,500 dwellings within nominated town centres or urban release areas. While the timing of new urban release areas largely relates to the orderly and economic development of land, consideration is given to the availability and schedule of programmed works for the provision of new infrastructure.

Notwithstanding the above, further detailed planning is required to ensure that DSPs are aligned to the release of additional Greenfield areas and to ensure that our existing network has the capacity to provide for the projected population growth. While Council's current sewerage network can accommodate an additional 203,000 residents, the existing sewerage infrastructure network is progressively being upgraded to cater for an increased population and compliance with new legislative standards.

On-site Sewerage Management Systems

A DCP 2005 Chapter – Onsite Effluent Disposal in Non-Sewered Areas was prepared to prevent the spread of disease, odours, contamination of water, soil and vegetation; propose measures to discourage vermin and insects; and to minimise adverse impacts on the amenity of the land. This chapter was recently amended to ensure that improved flooding information and climate change impacts are considered in the location of on-site sewerage management systems. Generally, the existing DCP chapter requires an assessment to be undertaken in accordance with performance criteria; promotes appropriate system selection; identifies guidelines for high-risk sites; and requires Council approval in the installation, operation and maintenance of these systems.

Upgrading Existing Facilities

Council is progressively upgrading its STPs, pumping stations and sewerage mains to cope with new and more stringent public health, environmental standards and improved infrastructure materials as well as increased load from a growing and visiting population.

Consider Odour Impacts

The Technical Framework for the *Assessment and Management of Odour from Stationary Sources* (Department of Environment and Conservation, 2006) states that odours are the largest source of air and pollution complaints. Odour issues usually arise when new or expanded urban development occurs within proximity to an existing odour-generating activity; or if such an activity is inappropriately located near residential development.

Of our six STPs, only the Charmhaven STP is located in an area outside of the zone of influence from current and projected residential areas. The Toukley and Bateau Bay STPs are located in areas adjoining existing residential subdivisions. While the Wyong South Treatment Plant does not directly impact on residential areas, it adjoins land proposed for redevelopment by the Central Coast Mariners as a Centre of Excellence. Both the Gwandalan and the Mannering Park STPs are located within the study area defined by the NWSSP and may impact upon future residential areas nominated by the draft Plan. Odour studies taking this into account will need to be undertaken during investigations for the release of these precincts in the future.

What are other Government Authorities currently doing?

Sewer servicing is for the most part the domain of Council, with little involvement from the State or Federal Governments, however the Independent Pricing and Regulatory

Tribunal of NSW (IPART) is an independent authority, which has a role in regulating the prices of developer charges for water, sewerage and drainage services.

The Standard Instrument, Wyong LEP 2013 and Wyong DCP 2013

What provisions can be incorporated into our Planning Instruments that will help facilitate our SEWERAGE INFRASTRUCTURE network?

Wyong Local Environmental Plan 2013

The following measures can be incorporated into Wyong LEP 2013 to improve our planning for our sewerage infrastructure network:

- Inclusion of model local clause Part 6 Urban Release Areas within Wyong LEP 2013, in particular Clause 6.2 – Public Utility Undertakings, which aims to ensure that any public utility infrastructure essential for the proposed development, including sewer servicing and infrastructure, is made available, prior to the commencement of development in these areas.
- In addition, significant sewerage treatment facilities are to be acknowledged with an SP2 Infrastructure (Sewerage Systems) zone under Wyong LEP 2013.

Wyong DCP 2013: Development Controls for Wyong Shire

The following measures can be incorporated into Wyong DCP 2013 to improve our planning for our sewerage infrastructure network:

- Model local clause 6.3 - Development Control Plan, requires a DCP be prepared prior to development of urban release areas, ensuring that development occurs in a logical and cost-effective manner, and only after a DCP chapter has been prepared. DCP chapters would include a staging plan for the timely release of land that provides for necessary infrastructure and sequencing, including sewerage servicing infrastructure.
- In addition, DCP 2005 Chapter 65 – Onsite Effluent Disposal in Non-Sewered Areas should be reviewed and retained as part of Wyong DCP 2013.

Key Planning Considerations:

Key Planning Considerations for our SEWERAGE INFRASTRUCTURE:

- *Ensure the orderly and economic development of land and the provision of appropriate infrastructure within new urban release areas and mitigate the adverse impacts of sewerage treatment infrastructure on surrounding development.*
- *Stage development within future urban release areas to mitigate odour impacts and problems associated with Sewer Pumping Stations, including ensuring only permanent works are permitted. No temporary works are to be permitted.*

Strategic Actions and Local Initiatives

SEWERAGE INFRASTRUCTURE

#	ACTIONS	RESPONSIBLE AUTHORITY	IMPLEMENTATION					COMMUNITY STRATEGIC PLAN	CENTRAL COAST REGIONAL STRATEGY
			LEP		DCP		Other		
			2013	Am.	2013	Am.			
IN09	Develop or amend DSPs to ensure new future urban release areas identified by the NWSSP are considered, in terms of the time of sewerage supply and servicing.	WSC					X	There are no CSP actions that apply to this component.	There are no CCRS actions that apply to this component.
IN10	Odour Studies to be undertaken for Toukley, Bateau Bay, Mannering Park and Gwandalan STPs with 2050 proposed operating capacity to identify odour impacts and buffers and limit development of the surrounding region.	WSC					X		

Planning for STORMWATER MANAGEMENT

HOW DO WE SUSTAINABLY CATER FOR OUR RESIDENTS, BUSINESS AND VISITOR POPULATION, IN TERMS OF STORMWATER MANAGEMENT?



Background to STORMWATER MANAGEMENT:

Stormwater consists of rainwater plus anything the rain carries along with it. In urban areas, impervious spaces (such as buildings, driveways, roads and footpaths) exacerbates the volume of stormwater runoff. Stormwater is carried either overland or through a system of pipes. Council is responsible for managing stormwater, including management of both water quantity and quality. The aims of stormwater management are:

- Reduce the potential stormwater danger to personal safety
- Reduce the potential stormwater damage to property
- Manage pollution of waterways and protect aquatic ecosystem health
- Utilise stormwater as a resource

Stormwater management includes the use of structural measures (physical infrastructure and treatment) and non-structural measures (education programs and monitoring). In addition to natural creeks, rivers and wetlands, Wyong LGA's stormwater drainage system consist of open and piped drains, culverts, and other pollution control devices:

Piped drains	415 km
Culverts and constructed channels	35 km
Flood mitigation basins	35
Wetlands	25
Gross pollutant traps	152
Pits, inlets and junctions	15,984
Headwalls	798
Natural water courses and drains	Many

Table 17:
Stormwater/Drainage
Infrastructure (State
of the Shire Report,
2009/2010)

Issues

What are the current and foreseeable issues that are, and will continue to impact, upon our STORMWATER MANAGEMENT network?

Population Growth

Wyong LGA is required to provide an additional 39,500 dwellings and create new business opportunities to present an additional 27,000 jobs by 2031. Increasing urban development may lead to increased volume and frequency of stormwater run-off entering our waterways. While stormwater is now recognised as a valuable resource, historically it flowed directly into our waterways, with little consideration to environmental impacts. Our stormwater infrastructure will need to be designed to mitigate such impacts in the future.

Level of Service

Our stormwater management systems generally provide a good level of service during typical rainfall events. However they are generally not capable of containing runoff in very large rain events, especially on flood prone land where stormwater systems follow the

path of natural watercourses. The targeted level of service for a particular area can change in accordance with the level of risk. Council will need to continue to review whether our level of service in relation to stormwater management is appropriate.

Climate Change

Whilst rainfall appears to have decreased in south-east Australia during the period from 1960-2009, it is likely that there will be an increase in intense rainfall events (CSIRO, 2010). Stormwater infrastructure available to accommodate these intense rainfall events needs to be considered. In addition, buildings will need to be designed to ensure that gutters and drainage systems can withstand such events. The low-lying nature of land around the Tuggerah Lakes system adds to difficulties in ensuring adequate drainage of stormwater when climate change impacts occur. This includes impacts due to an increase in permanent water levels in the Tuggerah Lakes system, increased rainfall intensity, and public health impacts due to more moisture in soil, creating mosquito-dense environments with possible subsequent health impacts from mosquito-borne diseases.

Community Expectations

Council has a kerb and gutter network covering approximately 898km. Kerb and guttering transfers stormwater from the road pavement and adjacent areas into a network of stormwater pits or other disposal locations to reduce flooding risks as well as minimising damage to private properties and infrastructure. The general community expectation is that all non-kerbed and guttered streets in the LGA should be upgraded to incorporate kerb and guttering. However, this will be prohibitively expensive, and is not suitable or required in all cases - the flat grade of some areas means that water has nowhere to drain with kerb and guttering. Instead, water sensitive road development standards are increasingly used including grass swales to replace kerb and guttering and piped stormwater drains. Infiltration measures can also be considered in areas with sandy soils.

Low Lying Land and Existing Stormwater Infrastructure

Wyong LGA has significant low-lying areas, particularly around the Tuggerah Lakes. There are also large areas where a very flat grade makes it difficult for stormwater to drain into a receiving waterway or stormwater drainage system. This creates difficulties in providing and maintaining a stormwater drainage system that can drain freely. High groundwater levels also have an impact on the infrastructure located underground, leading to an increase in degradation and ultimately failure of this infrastructure.

Planning for our Population

How do we plan for improvements to **STORMWATER INFRASTRUCTURE**?

Urban Stormwater Quality Management Plan

In 1999, Council adopted the *Urban Stormwater Quality Management Plan for the Tuggerah Lakes and Coastal Catchments*. This plan included a suite of actions including

corrective works, operational change and stormwater management studies to be undertaken. The aim of this plan was to ensure an ongoing commitment from stakeholders in protecting the social, environmental and economic values of both the Tuggerah Lakes and coastal catchments.

Integrated Water Cycle Management (IWCM) Sub-Plan

Stormwater harvesting and reuse is a new field of sustainable water management. Harvesting and reusing stormwater offer a potential alternative water supply for non-drinking uses, reduces inundation of sensitive aquatic environments and is a means to further reduce stormwater pollution in our waterways. Stormwater harvesting complements other approaches to sustainable water management, including rainwater tanks, grey water systems and effluent reuse.

In 2007, Council prepared an *Integrated Water Cycle Management (IWCM) Sub-Plan* to explore options for managing the water supply, sewerage and stormwater services. This sub-plan focused on assessing water efficiency and local sewage, stormwater and grey water recycling measures that could be put in place within the LGA. Gosford Council was also prepared an IWCM Sub-Plan, with the two parts being combined into a single document known as WaterPlan 2050 (discussed previously in the Planning for WATER SUPPLY AND SERVICING section). WaterPlan 2050 recommends further implementation of cost effective stormwater harvesting projects to generate additional water for non-drinking purposes such as irrigation of parks and sporting facilities.

Porters Creek Catchment Stormwater Harvesting Scheme

In 2006, an *Integrated Water Cycle Management (IWCM) Strategy* was formulated to mitigate stormwater runoff impacts on the Porters Creek Wetland from existing and proposed development in the Wyong Employment Zone and Warnervale Town Centre. A key aspect of the strategy is the Porters Creek Stormwater Harvesting Scheme, designed to capture and treat runoff, bypassing excess stormwater around Porters Creek Wetland and discharging it into Wyong River.

The estimated stormwater harvesting yield for the Porters Creek Stormwater Harvesting Scheme is approximately 3,000 megalitres per year once full development is achieved. If the scheme is expanded to collect water from existing developed areas such as Kanwal, Wadalba and Lake Haven this would result in an additional estimated yield of 4,000 megalitres per year. This could result in a total scheme yield of approximately 7,000 megalitres per year. The quality of the harvested water will depend on whether it can be delivered directly to the Wyong River weir pool or sent to Mardi Dam for potable water use which will contribute to ensuring sufficient water supply to the expanding Wyong LGA population.

Water Sensitive Urban Design (WSUD)

WSUD is the integration of various stormwater management practices that focus on interactions between the built form and the urban water cycle. It aims to minimise

changes to the natural water cycle and protect the health of aquatic ecosystems through planning and design. WSUD represents a significant shift in the way stormwater is considered in the planning and design of buildings and roads and drainage infrastructure. This approach is based on the premise that the processes of urban development and redevelopment need to adequately address the sustainability of the water and the receiving environment. Council has developed refined a chapter of Wyong DCP 2013 addressing WSUD, including technical guidelines for future development within the LGA.

The Tuggerah Lakes Estuary Management Plan (EMP)

Developed in 2006, the primary objective of the *Tuggerah Lakes EMP* is to provide direction for the management of Tuggerah Lakes and its catchment in order to ensure the sustainability of its ecological systems. The *Tuggerah Lakes EMP* is discussed in more detail in the 'Planning for ENVIRONMENT' chapter of this document. The EMP has a stormwater management component, with projects implemented including:

- Installing improved systems into residential and industrial areas to reduce excess stormwater run-off in areas like Saltwater Creek
- Building constructed wetlands and catchment improvements to filter nutrients, sediments and stormwater run-off.

Stormwater Levy and Section 94 Development Contributions Plans

The cost of funding stormwater management works is significant, and cannot be borne by Council alone. A recommendation of the *Tuggerah Lakes EMP* involved the introduction of the stormwater levy to assist in funding the stormwater treatment works identified in the *Tuggerah Lakes EMP*. The levy is also a significant source of funding for other stormwater works in the LGA. Council collects approximately \$1.7 million from this levy per year.

Stormwater management is also considered as part of Section 94 Development Contributions Plans in order to provide funding for stormwater management infrastructure providing for and associated with new development.

Floodplain Management Program

Council has a Floodplain Management Program, which aims to help Council manage the floodprone land of the LGA. In terms of stormwater management, these plans typically include improvements to stormwater systems, including the planning and construction of new pipes, channels, retarding basins and wetlands. These plans are discussed in more detail in the 'Planning for NATURAL HAZARDS' chapter of this document.

What are other Government Authorities currently doing?

In recognition of the key role that Council has in stormwater management and the need for ongoing funding for stormwater management, in 2005 the NSW Government amended the *Local Government Act 1993* to allow Council's to levy a stormwater management service charge (see above). The NSW Office of Water is responsible for the

management of the state's surface water and groundwater resources, including water licensing and compliance and implementation of major water infrastructure projects.

The Standard Instrument, Wyong LEP 2013 and Wyong DCP 2013

What provisions can be incorporated into our Planning Instruments to ensure that STORMWATER MANAGEMENT is effective?

Wyong Local Environmental Plan 2013

The following measures can be incorporated into Wyong LEP 2013 to improve our planning for our stormwater infrastructure network:

- Inclusion of model local clause Part 6 – Urban Release Areas in Wyong LEP 2013, in particular Clause 6.2 – Public Utility Undertakings, which aims to ensure that any public infrastructure (including stormwater) essential for a proposed development, is made available prior to the commencement of development in these areas.

Wyong DCP 2013: Development Controls for Wyong Shire

The following measures can be incorporated into Wyong DCP 2013 to improve our planning for our stormwater infrastructure network:

- Model local clause 6.3 - Development Control Plan, requires a DCP be prepared prior to development of urban release areas, ensuring that development occurs in a logical and cost-effective manner, and only after a DCP chapter has been prepared. DCP chapters would include a staging plan for the timely release of land that provides for necessary infrastructure and sequencing, including stormwater infrastructure.
- Council will continue to finalise and implement the DCP Chapter on WSUD.

Key Planning Considerations:

Key Planning Considerations for our STORMWATER INFRASTRUCTURE:

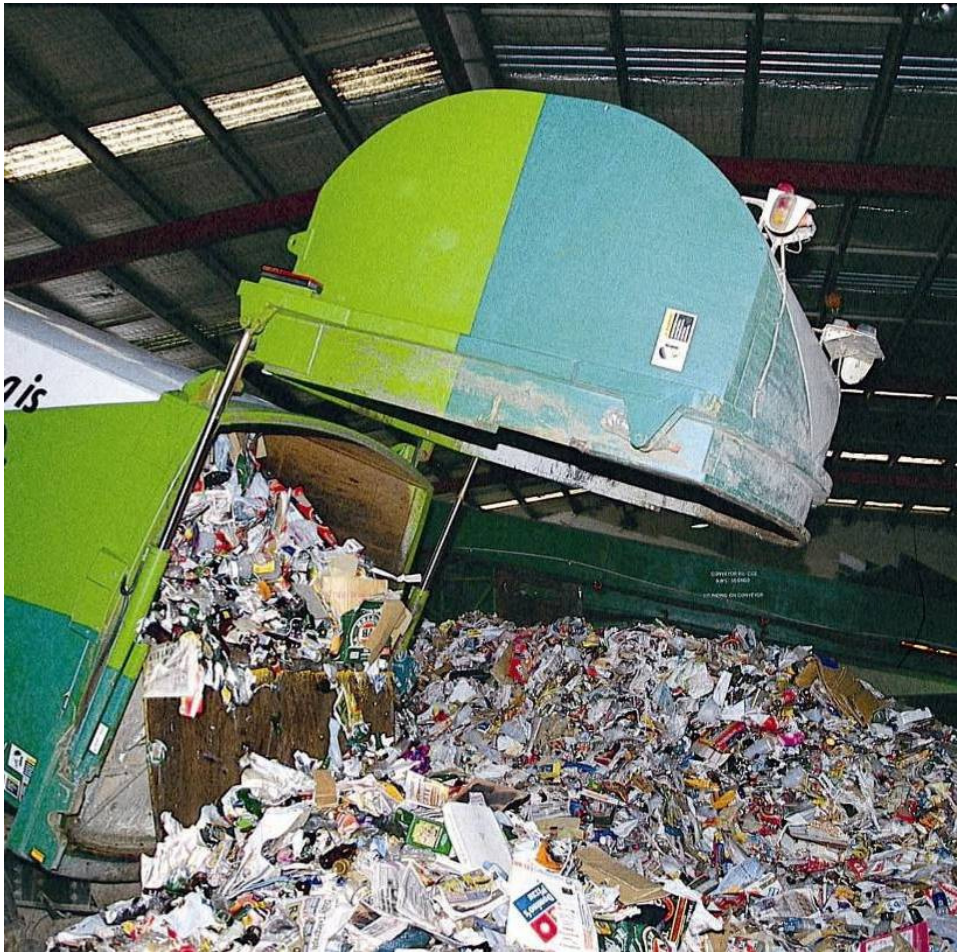
- *Implement site specific and/or precinct specific stormwater harvesting schemes. To reduce quantity of stormwater discharge, improve quality of stormwater runoff, and preserve pre-development hydrological regimes to protect natural wetlands.*
- *Encourage industrial and commercial stormwater re-use particularly within Business Parks, the Wyong Employment Zone and Warnervale Town Centre.*
- *Increase densities around open space to maximise stormwater re-use for irrigation, particularly for Warnervale/Wadalba and areas outside the Porters Creek Catchment.*
- *Section 94 Development Contributions Plans for new Greenfield and Infill development areas to consider integrated water cycle management, including management of water quality, quantity and water conservation.*
- *Continue to implement the objectives and actions of the Tuggerah Lakes Estuary Management Plan.*

Strategic Directions and Local Initiatives
STORMWATER MANAGEMENT

#	ACTIONS	RESPONSIBLE AUTHORITY	IMPLEMENTATION					COMMUNITY STRATEGIC PLAN	CENTRAL COAST REGIONAL STRATEGY
			LEP		DCP		Other		
			2013	Am.	2013	Am.			
IN11	Finalise, adopt and implement DCP Chapter – Water Sensitive Urban Design. This includes review of the Urban Stormwater Quality Management Plan for the Tuggerah Lakes and Coastal Catchments and incorporation into WSUD chapter where applicable.	WSC				X		There are no CSP actions that apply to this component.	8.2: Councils must incorporate appropriate water efficiency, integrated water cycle management and water sensitive urban design initiatives in local planning, development standards, policies and LEPs.
IN12	Refine, adopt and implement the Porters Creek IWCM Scheme and continue to seek grant funding to achieve the outcomes of this Scheme.	WSC					X		
IN13	Formalise and coordinate cross-organisational processes and disciplines to ensure the sustainable implementation and management of stormwater and stormwater assets.	WSC					X		
IN14	Fund the timely renewal and/or refurbishment of existing stormwater assets to ensure the efficiency of the network. This includes the opportunity to ensure the existing engineering control provides the best stormwater management solution for the land-use.	WSC					X		

Planning for WASTE MANAGEMENT

HOW DO WE SUSTAINABLY CATER FOR OUR RESIDENTS, BUSINESS AND VISITOR POPULATION, IN TERMS OF OUR WASTE MANAGEMENT REQUIREMENTS?



Background to OUR WASTE MANAGEMENT:

Buttonderry Waste Management Facility

Waste services provided within Wyong LGA include the collection of waste, recyclable materials, garden vegetation, bulk kerbside material, litter bin waste and some commercial waste. Waste within Wyong LGA is collected and disposed of at the Buttonderry Waste Management Facility (BWMF). Recyclables are diverted to the Somersby Materials Recycling Facility for sorting and dispatching to various recycling plants. Vegetation is transported to an organics processing facility located at the BWMF.

Council owns and operates the BWMF, which is the only solid waste facility operational within Wyong LGA. Located on the western side of Hue Hue Road, Jilliby, the BWMF site area comprises 270ha, with approximately 120ha approved for active land-filling operations. The remainder of the site is to be used as visual and odour buffer zones along roadways; protection of ridgelines and view corridors; protection of power easements; and protection of riparian zones along a 100m buffer either side of Buttonderry Creek, which dissects the site into an eastern and western section.

The BWMF consists of a number of land fill operational areas including the transfer area, the active landfill cell and various 'enterprise areas' which help to reduce waste to landfill. These enterprise areas include:

- Separate collection areas for batteries, used motor oil, mattresses, gas bottles, general recyclables, e-waste and tyres
- An organics processing facility
- A sorting and recycling area for scrap metal
- A stockpile and processing area for soil
- A stockpile and processing area for concrete, bricks and tiles for operational purposes
- A methane gas extraction system and power plant to generate electricity.

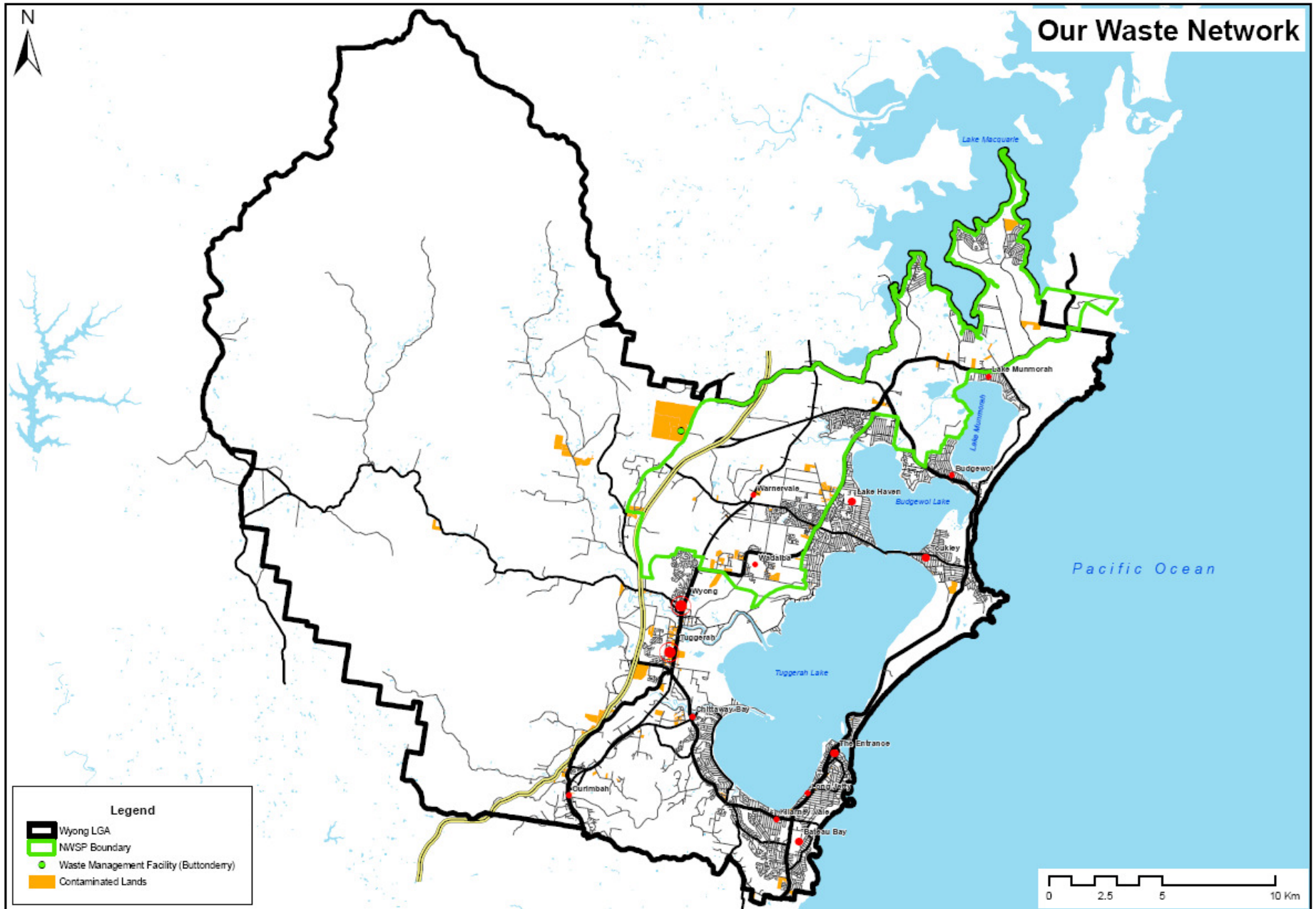
Issues

What are the current and foreseeable issues that are, and will continue to impact, upon Wyong LGA's WASTE MANAGEMENT?

Waste management is increasingly at the forefront of issues for Local Governments, the organisations that have traditionally been tasked with dealing with waste issues. Council recognises that delivery of waste management services is going to grow in complexity as population pressures increase (and consequently waste generation increases) at the same time that environmental controls, community expectations and management considerations are also increasing.

There are number of issues that will continue to impact upon Wyong LGA's Waste Management Services (following pages).

Figure 9: Our Waste Network



Increased Population

The total amount of waste generated in Wyong LGA per annum is steadily increasing. Whilst a proportion of this increase has been attributed to a general trend of increased packaging and a more 'disposable' society, a considerably higher proportion can be attributed to increasing population. As the population continues to increase, waste management mitigation measures need to be implemented, to ensure the life span of the BWMF is extended as far as possible.

The Shire's population is projected to grow to over 200,000 by 2031 – Community Plan 2008-2013

Life Expectancy of Buttonderry Waste Management Facility

The BWMF has an expected landfill life of approximately 45 years, with approximately 25ha of the 120ha site utilised at the present time. In 2009/2010, 212,000 tonnes of materials were received at BWMF. Approximately 50,000 tonnes of domestic waste, 44,000 tonnes of commercial and industrial waste, 12,000 tonnes of building and demolition waste and 27,000 tonnes of waste from Council's operations was landfilled. About 38,000 tonnes of vegetation, wood and biosolids was composted, and 37,000 tonnes of soil mainly from Council construction activities was used to cover waste at the end of each day. A total of 61,000 tonnes of material was diverted from landfill through composting and recycling. Improving diversion rates will increase the life expectancy of the BWMF.

Waste and Environment Levy (WEL)

The WEL is the price paid by operators to dispose of waste at landfills in the Sydney Metropolitan Area, Extended Regulated Area (ERA) and Regional Regulated Area. Wyong LGA is located within the ERA. The WEL is applicable under Section 88 of the *Protection of the Environment Operations Act, 1997* and is incorporated into disposal fees by landfill operators, whom then pass on the value of the levy to the State Government. The ERA levy is currently increasing by \$11.50 per annum plus Consumer Price Index (CPI). In the 2010/2011 financial year the levy is \$65.30 per tonne for waste disposed at BWMF. The WEL is one of the most powerful measures for driving increased waste diversion from landfill. By increasing the cost of disposal of each tonne of waste, the WEL provides an incentive to improve recycling and resource recovery solutions. A negative aspect of the WEL and associated cost of waste disposal is the problem of illegal dumping.

Carbon Tax/Emissions Trading Scheme

The carbon tax taxes carbon-containing emissions to the atmosphere. As of July 2012, the carbon tax is set to be implemented over a 3–5 year period upon which it will switch to an Emissions Trading System (ETS). Carbon emitters such as the electricity, coal, petroleum, and transport industries will be required to pay the carbon tax for every tonne of carbon equivalents emitted. This tax will therefore benefit non-carbon emitting industries such as the renewable power industry and provide strong incentives to reduce carbon emissions.

At present, carbon emissions are expected to cost approximately \$20-\$30 per tonne. The carbon tax is anticipated to have a significant impact on Council's waste management activities. The BWMF will exceed the 25,000 tonne threshold set by the Federal Clean Energy Future legislation (associated with the Carbon Tax), and will be liable to pay carbon tax. Taking into account the carbon tax, Council's Domestic Waste Management Charge (as part of Council rates) will increase by \$43 per rateable property in 2012-13 of which \$22 relates to the introduction of the carbon price. There is also currently uncertainty whether waste landfilled in the past (legacy waste) will be subject to the carbon tax.

In order to reduce our carbon tax liability, in December 2010 Council contracted the establishment of a methane extraction system and power generation plant at BWMF, which burns methane to generate electricity. Carbon dioxide is generated as part of this process, however Council's financial liability will be significantly reduced as methane is a far more potent greenhouse gas than carbon dioxide.

State Government Diversion Targets

The NSW Waste Avoidance and Resource Recovery Strategy 2007 (WARR) identifies waste reduction target to be achieved by 2014. The targets are as follows:

- Increased recycling of municipal waste to minimum 66%
- Increased recycling of commercial and industrial waste to minimum 63%
- Increased recycling of construction and demolition waste to minimum 76%.

Council's municipal waste diversion is currently 51%. Increasing this diversion rate can be achieved by diverting food waste from the mixed waste stream and processing it with vegetation, or by processing mixed domestic waste via Alternative Waste Technology (AWT). However, our 10-year waste collection and recycling contract commenced in 2008, preventing Council from changing waste collection and recycling arrangements to allow diversion of food waste without incurring potentially costly contract variations. Similarly our 7-year organic processing facility commenced in 2008 and is not licensed to process food waste. Obtaining such a licence will involve costly modifications to the current organic processing facility operations. Therefore, food waste processing is not possible until the expiry of this contract in 2015. Establishing an AWT facility will also ensure that the diversion target can be met. However, as planning approvals need to be obtained, and an Environmental Impact Statement and other supporting studies prepared, it is unlikely that Council will have access to a local AWT before 2018.

Planning for our Population

How do we plan for improvements to our WASTE MANAGEMENT System in light of the issues identified?

Waste management operations will need to become more sophisticated and considerable resources may need to be invested in the future. Council recently commissioned a

commercial strategy for Buttonderry Waste Management Facility that was designed to support improved efficiency of Council's waste management operations.

Capture and utilization of methane gas generated by the landfill

A methane gas extraction system and power plant was recently commissioned at the BWMF to capture and process biogas produced from closed landfill cells to generate renewable electricity. Council receives royalty payments of 15% on proceeds from the sale of electricity and the associated green electricity credits. It is expected that the power plant will generate revenue of \$2.6 million over 20 years.

Recycling

Increased environmental awareness within the community and State Government pressure has encouraged Council to expand recycling services and collect an ever increasing selection of materials for recycling, often at significant cost. Many materials currently collected such as e-waste and mattresses do not generate revenue to Council and require large subsidies. The savings made by receiving a rebate for the waste levy does not cover the cost of collection and recycling. However, it is recognised that diverting these items will save landfill space and conserve finite resources.

Overall efficient management and reduction of disposal of waste streams in landfills also supports the potential to provide multiple benefits, including:

- Meeting (and/or exceeding) State Government landfill diversion targets
- Increased resource recovery in a move to conserve finite resources
- Reduced greenhouse gas emissions and reduced financial impacts under a carbon tax
- Potential generation of green energy
- Diversion of recyclable materials to preserve land fill space
- Generation of secondary resources such as compost, crushed concrete and soil.

Soil Processing Facility (SPF)

A key outcome of the commercial strategy for the BWMF is to improve the immediate cash flow, financial performance and longevity of the BWMF by developing an SPF. An SPF will be used to better manage, divert and recycle a range of materials such as virgin excavated natural material, excavated natural material and soil from Council's construction works. Analysis has shown that establishment of such a facility offers significant benefits in reducing the amount of waste sent to landfill. Council will investigate this option further and begin planning and implementation for the facility. Council is also currently considering other suitable sites for SPF's, in order to ensure various locations within the LGA are available, minimising the distance required to travel to BWMF for this purpose.

Alternative Waste Technology (AWT)

As part of the commercial strategy for the BWMF, Council is considering development of an AWT facility, subject to further detailed investigations into the commissioning and development of such a facility. There are a number of potential benefits offered by AWT,

including reducing the amount of material going to landfill, generation of renewable electricity and improved resource recovery; however the financial and economic benefits require further analysis to quantify the benefit in terms of extending the life of the BWMF. Options to partner with Gosford City Council and Lake Macquarie Council in a joint venture AWT solution will be considered. It should be noted that delaying a decision to invest in an AWT will allow for technology to mature, Government controls and regulations to evolve and for the risks associated with the technology (technological, regulatory and financial) to be better managed.

Waste Prevention

A large proportion of waste generated, such as food waste, could be avoided. Community awareness and education programs may be beneficial in raising awareness of waste management issues and encouraging higher rates of recycling and home composting, as well as increasing consumer demand for products with less packaging.

Identification of new landfill sites

As stated previously, the BWMF currently has an anticipated life expectancy of 45 years. With the introduction of AWT facilities, improved diversion of recycled materials from the landfill as well as overall waste avoidance, this figure is expected to increase in the future. These factors will reduce the need to identify future landfill sites in the short-term. However, as part of the CCRS, Council is required to identify suitably-located and appropriately zoned land for new water supply, wastewater treatment and recycling, energy and waste avoidance, and resource recovery infrastructure, to support growth in major regional centres and major towns. Council will investigate suitable future sites.

Central Coast Waste Authority

Council is currently liaising with Gosford City Council in relation to establishing a Central Coast Waste Authority, to provide regional waste programs and initiatives to the Central Coast. Close collaboration between the Councils and the subsequent delivery of regional programs has the potential for significant cost savings by creating economies of scale and increasing efficiency. For example, our current waste collection and recycling contracts were procured as a joint initiative and resulted in substantial savings compared to individual contracts. In addition, the two Councils conduct regional household and joint e-waste collections. The regional contract and joint promotion for these collections resulted in greater efficiencies and subsequently cost savings.

At present, Gosford City Council is aligning its next organics processing contract with the terms of Wyong Shire Council's organics processing contract. Aligning the contract terms will allow the establishment of a regional compositing facility by 2015 after the expiry of the contract for the operation of an organics facility at BWMF. Opportunities for additional collaboration may include:

- Development of a Regional Waste Strategy
- Establishment of a regional AWT facility

- Establishment of a regional soil processing facility
- Regional contracts for the purchase of scrap metal
- Regional contracts for the collection of e-waste and other recyclables.

What are other Government Authorities currently doing?

Waste Avoidance and Resource Recovery (WARR) Strategy

Implemented in 2003, the WARR Strategy provides a framework for reducing waste generation and improving our use of resources.

The key result areas of the WARR strategy are:

- 1 Preventing and avoiding waste
- 2 Increasing recovery of secondary materials
- 3 Reducing toxicity in products and materials
- 4 Reducing litter and illegal dumping.

The WARR Strategy aims to increase recycling of materials from the municipal waste stream to 66% by 2014 – Department of Environment, Climate Change & Water, 2010

The Office of Environment and Heritage is required to report progress against the WARR Strategy every two years. The Waste Avoidance and Resource Recovery Strategy Progress Report (Department of Environment, Climate Change & Water, 2010) states that recycling on the Central Coast increased from 56% in 2006–07 to 59% in 2008–09. The report also identifies challenges and opportunities including recovering food waste and garden organics from households; and focussing on waste avoidance by reducing food waste and improving packaging.

Waste and Sustainability Improvement Payments (WaSIP) program

The WEL contributes to the provision of funds for the WaSIP program. The WaSIP Program assists Councils invest in programs that will improve sustainability outcomes across their LGA. To be eligible to receive a WaSIP payment, Councils are required to commit to meeting both the ongoing and current year's WaSIP Standards. The WaSIP Standards are progressively updated in consultation with an Advisory Group and the Local Government and Shires Associations. However, there is an imbalance between the amount of levy collected by the State Government versus that returned to Councils to assist funding waste diversion projects under the WaSIP program. In 09/10 Council received \$550,000 and in 10/11 received \$750,000 from the WaSIP program. The funds were used to implement four waste and sustainability projects in 09/10 and 16 projects in 10/11.

The Standard Instrument, Wyong LEP 2013 and Wyong DCP 2013

What provisions can be incorporated into our Planning Instruments that will help facilitate our vision for sustainable WASTE MANAGEMENT?

Wyong Local Environmental Plan 2013

The following measures can be incorporated into Wyong LEP 2013 to improve our planning for our waste management:

- In view of the life span of the BWMF and the LGA's continued reliance on this site as the sole waste management facility, the site should be zoned SP2 Infrastructure (Waste Management Facility) under the provisions of Wyong LEP 2013.

Wyong DCP 2013: Development Controls for Wyong Shire

The following measures can be incorporated into Wyong DCP 2013 to improve our planning for our waste management:

- Council has a key dual role to play in waste management. Firstly, as a service provider, arranging for the collection of recyclable materials and waste, and secondly, as a regulator of building and land use activity.
- In this latter role, Council developed DCP 2005: Chapter 69 – Controls for Site Waste Management and a set of Waste Control Guidelines, which promote waste avoidance, reduction, re-use, recycling and (as a last resort) disposal to landfill. Design criteria for collection, storage and recycling areas and facilities are detailed within these Guidelines. Chapter 69 requires the preparation of Waste Management Plans (WMP) for submission with any of the following applications:
 - Local development;
 - State significant development; and
 - Designated development.

This chapter will be reviewed and retained as part of Wyong DCP 2013. The chapter will be known as "Site Waste Management".

- DCP provisions apply only to development applications and Complying Development Certificate applications lodged under Part 4 of the Environmental Planning and Assessment Act 1979 (EPA Act). Council has therefore also adopted Policy C6 - Controls for Site Waste Management to require the preparation of a Waste Management Plan to address applications for the approval of activities, whether by Council or other applicants, in accordance with Part 5 of the EPA Act.
- Where development or works proposed by Council are subject to assessment under Part 5 of the EPA Act, waste management shall be considered integral to the design of the proposal and be documented within the Review of Environmental Factors (REF). A WMP shall also be prepared and lodged in accordance with the objectives of the Site Waste Management DCP Chapter and associated Technical Guideline.

Key Planning Considerations:

Key Planning Considerations for our WASTE MANAGEMENT:

- Promote waste avoidance and resource recovery in demolition and building work as well as in the design and occupancy of residential, commercial and industrial development.
- Support waste efficient business activities and provide continuing community waste education programs.

Strategic Actions and Local Initiatives
WASTE MANAGEMENT

#	ACTIONS	RESPONSIBLE AUTHORITY	IMPLEMENTATION					COMMUNITY STRATEGIC PLAN	CENTRAL COAST REGIONAL STRATEGY
			LEP		DCP		Other		
			2013	Am.	2013	Am.			
IN15	Buttonderry Waste Management Facility to be zoned SP2 Infrastructure (Waste Management Facility) under the provisions of Wyong LEP 2013.	WSC	X					There are no CSP actions that apply to this component.	<p>6.14: Integrate the aims and objectives of the NSW waste avoidance and recovery strategy (NSW Department of Environment and Climate Change 2007) through local development standards and policies.</p> <p>9.3: Councils are to identify suitably-located and appropriately zoned land for new water supply, wastewater treatment and recycling, energy and waste avoidance, and resource recovery infrastructure, to support growth in major regional centres and major towns. (IN20)</p> <p>9.6: Councils are encouraged to promote waste avoidance and resource recovery in demolition and building work as well as in the design and occupancy of residential, commercial and industrial development.</p>
IN16	Include a Site Waste Management Chapter in Wyong DCP 2013.	WSC	X						
IN17	Identify suitably-located and appropriately zoned land for new recycling, waste avoidance, and resource recovery infrastructure, to support growth in major regional centres and major towns.	WSC	X	X					

Planning for PUBLIC UTILITY INFRASTRUCTURE

HOW DO WE SUSTAINABLY CATER FOR OUR RESIDENTS, BUSINESS AND VISITOR POPULATION, IN TERMS OF OUR PUBLIC UTILITY INFRASTRUCTURE?



Background to OUR PUBLIC UTILITY INFRASTRUCTURE:

A public utility is an organisation which provides and maintains essential services or commodities to the public. Having consideration for the provisions of SEPP (Infrastructure) 2007 (Infrastructure SEPP), a public utility under this Settlement Strategy includes Electricity and/or Gas Generating Works and distribution easements; as well as Telecommunications facilities and infrastructure.

Electricity Generating Works, Electricity Transmission and Distribution

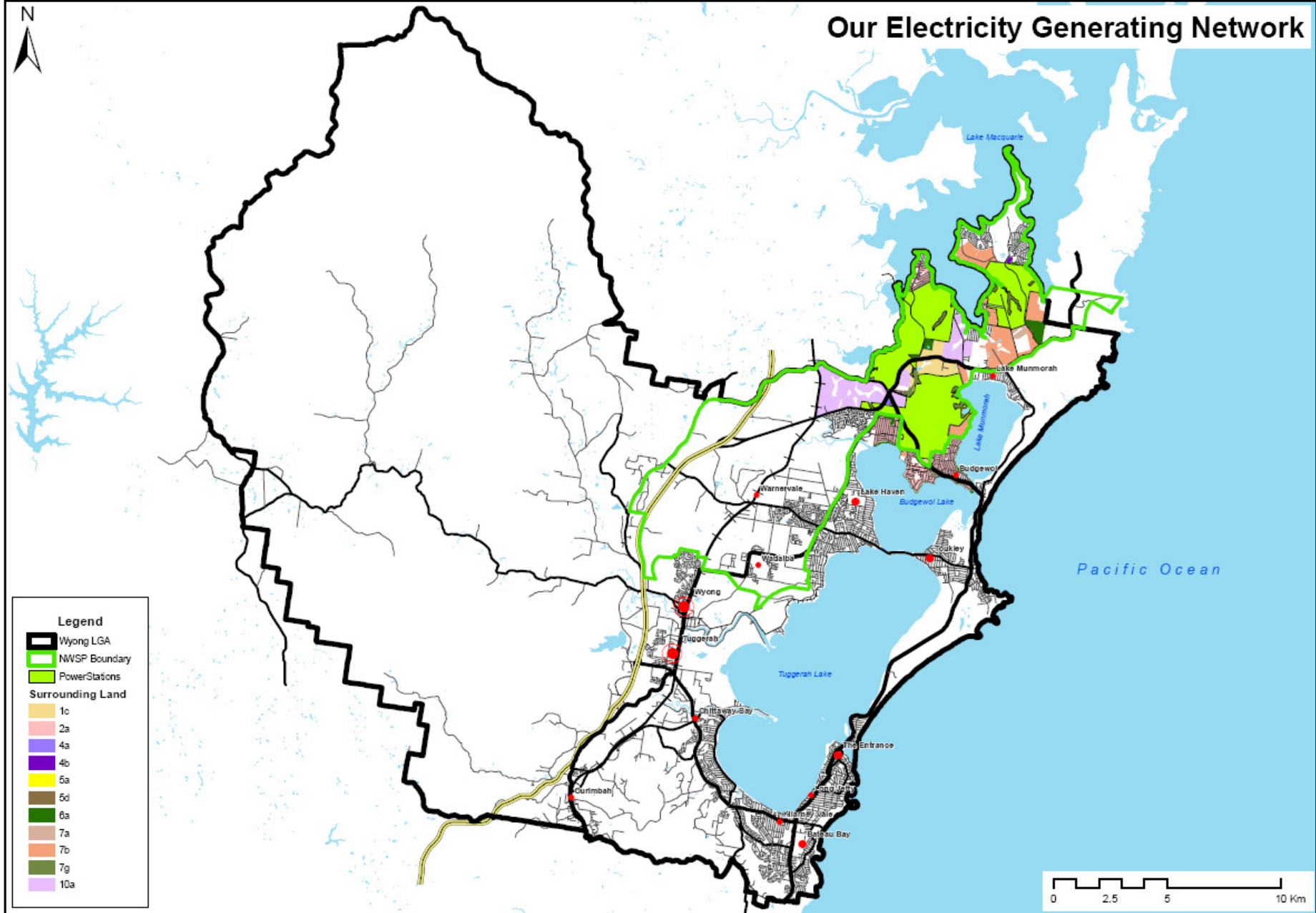
AusGrid owns and operates the electricity network on the Central Coast. Over \$600 million will be invested in upgrades from 2009-2014, to ensure Central Coast networks meet increasing demands. This includes the upgrading of substations and the provision of new high voltage (HV) powerlines.

At present, Delta Electricity operates three Power Stations located within the Wyong LGA, including two coal-fired power stations at Munmorah and Vales Point and a gas-fired power station at Colongra. Both the Munmorah and Colongra Power Stations are located on a 940 hectare site along Scenic Drive, Colongra. Comprising two steam turbines, gas turbines and ancillary infrastructure; the Munmorah and Colongra Power Stations have the capacity to generate in excess of 1,200 megawatts (MW) of electricity. Straddling the Wyong and Lake Macquarie LGA boundary, the Vales Point Power Station has the capacity to generate approximately 1,300 MW of electricity.

Telecommunication Infrastructure

Wyong LGA is currently served by 15 Telephone exchanges. ADSL and ADSL+ are available from most exchanges, however only one exchange (Long Jetty) is served by alternate ADSL suppliers. ADSL+ provides high speed access, however is severely impacted by signal loss due to cable quality and radial distance from the telephone exchange. The topography of Wyong LGA can also present challenges in relation to signals, and there are a number of areas within the LGA where ADSL+ is not a viable option. In some instances where cable distances preclude standard ADSL access, Telstra has provided remote multiplexer technology however this is limited to ADSL technology.

Figure 10: Our Electricity Generating Network



Issues**What are the current and foreseeable issues that are, and will continue to impact, upon our PUBLIC UTILITY INFRASTRUCTURE?****Electricity Generating Works, Electricity Transmission and Distribution****1 Population growth**

World energy demand is expected to increase by 45% between 2008 and 2030 (International Energy Agency, 2008). Future growth within the LGA will place significant demands on existing capacities within the distribution network. Infill development will require additional capacity from existing substations, upgrading of facilities within centres will therefore be required. Our new release areas will increase loads on existing facilities, and allowance will need to be made for additional substation sites within development areas. The identification of suitable substation sites and new transmission routes needs to be undertaken as part of the detailed structure planning for these areas.

2 Adequate buffer distance

Encroaching urban development requires the provision of appropriate land use buffers or provisions to ensure that adverse impacts, such as air quality, noise impacts and exposure to potential hazards, from power stations are mitigated. For example, NWSSP Precinct 14 adjoins the Munmorah and Colongra Power Stations. In light of the potential environmental impacts, the NWSSP recognises that Precinct 14 is suitable for future employment generating activities rather than more sensitive uses such as residential.

3 Future Use of Power Station Sites

The Munmorah and Vales Point landholdings are largely undeveloped, with considerable tracts of undeveloped bushland acting as land use buffer between operational land and surrounding land use activities. The future use of this land is of particular interest to Council, given the size of this area of land, the degraded nature of parts of the Power Station sites, as well as areas of the sites with high environmental conservation value. In particular, certain peripheral areas of Power Station-owned land is utilised for purposes other than electricity generation, such as open space and recreational uses. With the formal closure of the Munmorah facility in 2012, this issue is of concern to Council.

Telecommunication Infrastructure**1 Reliability and Effectiveness of Telecommunications Infrastructure**

Technology infrastructure is essential for the competitiveness of Wyong LGA businesses. E-commerce is hampered in some areas by the lack of access to reliable telecommunications including broadband services.

2 Communications Towers

The *Telecommunications Act 1997* permits certain telecommunications facilities to be installed without a development application, and the Infrastructure SEPP also specifies

certain types of telecommunications facilities as exempt development. As a result, significant opposition has arisen in relation to the potential health impacts associated with towers and also their aesthetic influence on the built and natural environments.

3 Cost implications for retro-fitting telecommunications infrastructure

It is costly to retro-fit telecommunications facilities and underground services to existing areas. Therefore it is important that new release areas be planned for long-term telecommunications infrastructure needs.

4 Ageing telecommunications infrastructure

Telecommunications facilities and underground services to existing areas is ageing and may not be adequate for future needs. Therefore it is important that appropriate long-term planning for telecommunications infrastructure upgrades is undertaken in conjunction with population growth and increased development.

Planning for our Population**How do we plan for improvements to our PUBLIC UTILITY INFRASTRUCTURE in light of the issues identified?****Electricity Generating Works, Electricity Transmission and Distribution**

The Infrastructure SEPP was introduced to facilitate the delivery of infrastructure by supporting 'greater flexibility in the location of infrastructure and services. Along with the provisions of the Infrastructure SEPP, the State Government, through new planning methodology, aims to ensure the greater flexibility and the adaptive management of government land by reducing the application of 'special use zones' within an LGA. While the provisions of the Infrastructure SEPP now enable public utility undertakings to carry out certain infrastructure developments with limited input from Council, a review of all undertakings is required to ensure the application of appropriate zones under Wyong LEP 2013 and minimise potential conflicts with adjoining land use activities.

Telecommunication Infrastructure

Council has adopted extensive resolutions that demonstrate awareness of and commitment to the National Broadband Network (NBN) rollout. Council is currently supporting the Regional Development Australia business case for priority NBN rollout. Wyong LGA benefit enormously from an early rollout of the NBN, in terms of economic, educational and health care benefits. In October 2011, it was announced that Long Jetty will be one of ten new locations across NSW to become part of the early rollout NBN.

What are other Government Authorities currently doing?**Future Use of Power Station Sites**

Delta Electricity anticipates that Vales Point Power Station could operate beyond the next 25 years, and a Part 3A Major Project Application for the rehabilitation and replacement of

ageing components of Munmorah Power Station was approved by the Minister for Planning in October 2010. The proposal enables Delta Electricity to rehabilitate the site to restore the efficiency of existing infrastructure and extend its operational life.

In spite of these plans for Munmorah Power Station, the size of the Munmorah and Vales Point landholdings means that a considerable area of largely undeveloped “buffer” land will continue to be considered for a range of future land uses. This has the potential to affect land utilised for open space and recreational purposes by the Community. Therefore, Council will liaise with Delta Electricity and the State Government to investigate the transfer of lands owned by Delta Electricity, to allow the continued operation of the Extreme Sports Park, Koala Park, a site bound by Scenic Drive, Highview Street and The Outlet, San Remo, and the recreation and open space lands at Vales Point Power Station.

Investment in Renewable Energy Sources

Over the last 5 years, the State and Federal Government has encouraged private landowners to invest in renewable energy sources (mainly solar and wind power) by way of rebates and feed-in tariffs. As more households and businesses invest in renewable energy, this will reduce reliance on coal-powered electricity generation and hence reduce reliance on our Power Station sites. In order to encourage continued take-up of renewable energy sources, Council will prepare and implement a Renewable Energy Strategy, in accordance with Council’s Natural Resource Management Strategy.

National Broadband Network (NBN)

Australia currently relies on an ageing copper telecommunications network to connect most homes to the internet, which has resulted in our broadband performance falling behind other developed countries. The NBN is a Federal Government initiative that will deliver high-speed broadband, essential for Australia’s future economic growth and international competitiveness. Implementing the NBN will involve laying fibre optic cable to at least 90% of Australian households, schools and businesses, with the remaining 10% being connected via next generation high-speed wireless and satellite technologies. The NBN will increase access to high-speed internet across Wyong LGA, enabling improved education and employment outcomes, as well as improving community connectedness.

The Standard Instrument, Wyong LEP 2013 and Wyong DCP 2013

What provisions can be incorporated into our Planning Instruments that will relate to the provision of PUBLIC UTILITY INFRASTRUCTURE?

Wyong Local Environmental Plan 2013

The following measures can be incorporated into Wyong LEP 2013 to improve our planning for our public utility infrastructure:

- In relation to electricity generating works, Council must reconsider the application of all special uses zonings for public utility infrastructure. In addition, the NWSSP states that Power Station landholdings are to be zoned to reflect their dominant use.
- Given that the Munmorah and Vales Point Landholdings are considered to be complex infrastructure and it is unlikely that land use activities on the site will change, the three Power Stations should be rezoned to SP2 – Infrastructure (Electricity Generating Works) under the provisions of Wyong LEP 2013.
- In relation to the NBN, the DP&I has developed a model local clause for the provision of public utility infrastructure within Future Urban Release Areas, that requires that development consent not be granted for development on land in an urban release area unless the Council is satisfied that any public utility infrastructure that is essential for the proposed development is available or that adequate arrangements have been made to make that infrastructure available when required.

Wyong DCP 2013: Development Controls for Wyong Shire

The following measures can be incorporated into Wyong DCP 2013 to improve our planning for our public utility infrastructure:

- Through the incorporation of model local clause Part 6 – Urban Release Areas, future urban release areas will require the preparation of a DCP, prior to release. In relation to public utility infrastructure, while Precinct 14 is identified as an area suitable for future employment generating activity, such a DCP would ensure that appropriate provisions to mitigate the adverse impacts of the Munmorah and Colongra Power Stations are considered. Appropriate environmental overlays that reflect the environmental values of undeveloped land on each of the sites should be protected through the incorporation of environmental overlays within the DCP.
- In addition, in the future Council should require that implementation of the NBN and other telecommunications infrastructure is considered in the planning of the Urban Release Area Precincts. This may occur by including guidelines in the Wyong DCP 2013. Councils existing DCP Chapter on Subdivision requires that communications infrastructure including cabling/conduit be provided underground in all new subdivisions. This should be updated to account for the NBN rollout.

Key Planning Considerations:

Key Planning Considerations for our PUBLIC UTILITIES:

- *Improve and maintain working relationships with Energy Providers to ensure a coordinated approach to projects.*
- *Continue to liaise with RDA (Central Coast/Hunter) and the NBN company regarding locations for further NBN rollout within the LGA.*

Strategic Actions and Local Initiatives
PUBLIC UTILITY INFRASTRUCTURE

#	ACTIONS	RESPONSIBLE AUTHORITY	IMPLEMENTATION					COMMUNITY STRATEGIC PLAN	CENTRAL COAST REGIONAL STRATEGY
			LEP		DCP		Other		
			2013	Am.	2013	Am.			
IN18	Wyong LEP 2013 will zone the Munmorah, Colongra and Vales Point Power Stations SP2 - Infrastructure (Electricity Generating Works); and include appropriate overlays in Wyong DCP 2013 indicating environmentally sensitive land and the biodiversity attributes of each of the Power Station sites.	WSC	X		X			<ul style="list-style-type: none"> ▪ Providing free wireless broadband throughout Wyong LGA. This should be in partnership with network providers, industry and governments and enable all businesses and residents to be electronically connected. ▪ Developing and implementing guidelines to ensure all residences and businesses as well as commercial and educational centres can be quickly linked to fibre-optic telecommunications networks. Hi-speed networks should be connected as soon as buildings are completed and before businesses start operating. <p>9.4: Suitable locally-generated and/ or renewable energy projects such as wind, solar, bio-waste and wave power will be supported.</p>	
IN19	Future planning of Precinct 14 identified by the NWSSP should make provision for appropriate land use buffers to mitigate adverse environmental impacts, including noise and air pollution and the exposure to potential hazards.	WSC		X		X			
IN20	Wyong DCP 2013 to include a requirement that implementation of the NBN and other telecommunications infrastructure is considered in the planning of Urban Release Area Precincts.	WSC					X		
IN21	Approach the State Government and advocate for the preparation of long-term strategic plans for public utility undertakings which consider the projected population growth identified by the NWSSP; Settlement Strategy; and the projected impacts of Climate Change.	SG					X		
IN22	Approach the State Government and advocate for the investigation of opportunities for renewable energy.	SG					X		
IN23	Prepare and Implement a Renewable Energy Strategy, in accordance with Council's Natural Resource Management Strategy.	WSC					X		
IN24	Seek State Government support for the transfer (at no cost) of Delta Electricity land at Vales Point Power Station to allow the continuing operation of the Extreme Sports Park, Koala Park, the triangle of land bound by Scenic Drive, Highview Street and The Outlet, San Remo, and recreation and open space lands.	WSC					X		