

A tall, lattice-structured telecommunications tower with multiple antennas and satellite dishes, set against a clear blue sky with some green trees visible in the lower left and bottom edges.

Asset Management Plan - Telecommunications Facilities

Policy Number: POL11/115

Adopted: 23/07/2013

Minute Number: D13/188641

File: 9171E

Produced By: Shoalhaven Water Group

Review Date: 1/12/2016

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1. EXECUTIVE SUMMARY

The Information Technology Section manages Telecommunication Facilities used by Council and emergency and essential service operators. Council seeks to offset the cost of these facilities, return a surplus to the community, and minimise the proliferation of towers by encouraging co-located use of its facilities by private enterprise customers. Council seeks to manage these assets in the most cost effective manner and in a way that meets the required level of service for facility users and more broadly for the community.

This Asset Management Plan (AMP) has been developed to provide a sustainable approach to the management of Telecommunication Facilities and is prepared under the umbrella of Council's Community Strategic Plan and its vision, mission, objectives and strategies. This Plan is a support document to Council's Delivery Program and Operations Plan and complements the overall Information Technology Strategy 2012-2015 to ensure that the Telecommunications facilities are provided within economic, environmental and socially sustainable criteria.

The majority of Council's Telecommunication Facilities have been built by telecommunication carriers on Council-owned land – managed as either 'General Fund' or 'Shoalhaven Water' assets - with asset ownership passing to Council in return for an extended rent relief period, granted to the carrier typically over 20 years. There has been a move away from this model since approximately 2010 with carriers now preferring to build and own the tower facilities. Council facilitates access arrangements to Council's operational land and Council-controlled Crown land where the sites will enable network coverage improvements. This phenomenon has led to a shift in some site-specific operating conditions relating to WHS and access arrangements.

The asset replacement value for Telecommunication Facilities owned by Council is now over \$7 million. The age of these assets varies considerably, with one tower over 20 years old and others approaching 20 years, which is considered to be the 'half-life' of this type of facility. However in most cases the major factor governing or driving asset replacement will be the ability of the tower structure to meet increasing future demands, rather than the tower's end of useful life under current demand conditions. Therefore a major focus of the AMP is to provide a strategic approach to facility redevelopment through renewal, enhancements and capacity upgrades.

Owing to the critical nature of these facilities it is essential that management, maintenance and repair is kept to a high standard. Because of this, forecasting maintenance expenditure is also a critical element of this AMP.

2. PROGRAM OBJECTIVES

This AMP is governed by the following principles:

- Council operational needs - A network of telecommunications facilities allowing a range of Information Technology and Telecommunication (IT&T) infrastructure to be networked for the conduct of Council's diverse core business activities across the 4,660 sq km Council area. Specific operational telecommunications networks

include two-way radio, microwave communications links and telemetry automation & control.

- A Safe Community - Telecommunications infrastructure which facilitates an effective emergency communications networks across the Shoalhaven area to support emergency and essential service community response.
- Access to Information and Services - Telecommunications infrastructure which supports and facilitates the optimum 'connectedness' of Shoalhaven communities with global data and telecommunications systems.
- Effective Use of Resources - Revenue derived from the use of Council's infrastructure by other parties will be commercially based, supporting the sustainable provision of the network assets in the long term while recognising the financial constraints of community and not-for-profit groups.

This AMP provides a framework for the management and operation of all Telecommunication Facilities owned by Shoalhaven City Council. Maintenance levels should control operational risks, maximise returns and extend useful life of the facilities.

A key issue affecting the useful life of these facilities is the limit of useable tower capacity, primarily related to structural limitations. This AMP therefore also focuses on redevelopment strategies.

There are a number of factors that influence telecommunications facility management, including:

- Tower ownership - facility towers are predominantly owned by Council, however there have been a number of facilities developed since 2010 where the tower is owned by the telecommunications carrier that constructed the facility. In the latter case, Council will manage the non-leased areas within the facility (including its own equipment huts) with the asset management of the tower resting with the tower owner.

Revenue from ground leases for non-Council towers is attributed to this asset class and helps provide financial capacity to renew and maintain the towers portfolio. This Plan outlines how tower ownership and the significant difference in asset arrangements are managed.

- Council's management models - facilities are subject to two management models, reflecting the location of some tower facilities on Shoalhaven Water sites, managed by Southern Water Services, and other sites managed directly by Council's Information Technology section.

Development of a single management structure should be considered, to provide a streamlined and efficient process for development, maintenance, operational control and reporting.

Council owns and manages the following Telecommunications Facilities;

General fund sites

- Red Rocks
- Cambewarra
- Moeyan Hill, Berry
- Clover Hill, Kangaroo Valley

SWS sites

- Vincentia
- West Ulladulla
- Sussex Inlet
- Bewong
- Fishermans Paradise
- Coonemia
- Sassafras
- Huskisson
- Currarong
- Deering St water res, Ulladulla
- Pengana Crs Reservoir, Mollymook
- Browns Hill, Sth Nowra
- Emergency Management centre

Council is committed to ensuring that the facilities are maintained to a high standard and in a manner that ensures integrity of tower structures and suitability of ancillary structures such as equipment huts and the security systems. It is recognized that it is neither reasonable nor practical to target “zero defects”. However it is an objective to have only defects that are low risk and/or subject to control measures that mitigate any risks and none that affect tower structures or pose a risk to health and safety.

The desirable situation is that the annual capital works and maintenance programs will allocate sufficient resources to ensure these objectives are met.

3. ASSET DESCRIPTION

Telecommunication facilities are sited at various locations throughout the local government area. The facilities have various types of construction materials and differing ancillary assets, including towers, equipment huts, electrical and mechanical assets, etc. A brief general description of each existing telecommunication facility is shown in Table 1a.

Table 1a): Telecommunication Facilities – Towers Owned by Council

Site	Conquest No.	Tower Construction	Height	Hut Type	Generator	Access Rd
Sussex Inlet STP	1447744	Lattice tower	55m	Demountable	No	Grass verge off sealed road
Moeyan Hill, Berry	156659	Concrete monopole	30m		No	Dirt access track, no track through paddock
Fishermans Paradise	156379	Lattice tower	50m	Brick	No	Dirt access track
Mt Cambewarra	144629	Lattice tower	70m	Brick	Yes	Sealed road / carpark
Red Rocks	144606	Lattice tower	38m	Brick	Yes	Dirt access track
Emergency Management Centre		Lattice tower	30m	Equipment housed within the EOC	Yes	Sealed Road
Sassafras	156372	Lattice tower	30m	Shipping container	No	Dirt access track
Bewong	156386	Lattice tower	55m	Brick	No	Dirt access track
Vincentia Reservoir	156365	Concrete monopole	30m	Brick	No	Dirt access track
Coonemia	156390	Lattice tower	50m	Brick	No	Sealed access track, grass track
West Ulladulla	144780	Lattice tower	45m	Brick	No	Sealed road
Currarong	274676	Monopole	25m	NA	No	Sealed road / carpark
Huskisson	274679	Lattice tower	70m	Demountable	No	Dirt access track
Kangaroo Valley	274682	Concrete monopole	30m		No	No track through paddock
Deering St Reservoir	406299	Water reservoir	15m	Water reservoir	No	Sealed road
Brown Hill Res	209561	Water reservoir		Water reservoir	No	Sealed road
Pengana Crs Reservoir	172611	Water reservoir	12m	Water reservoir	No	Sealed road

Table 1b): Telecommunications Facilities – Towers Owned by Others on Council owned or managed land

Site	Conquest No.	Tower Owner	Height	Hut Type	Generator	Access
Kings Point	383692	Telstra	70m	Demountable	No	Sealed access road, dirt access track
Callala Bay	N/A	Telstra	40m	NA	NA	Sealed road
Bomaderry Depot, Gresham Way	N/A	Telstra	30m	NA	NA	Sealed road, access track

4. ASSET EXTENT AND CONDITION

Audits of Telecommunication Facilities occur twice yearly and include site maintenance and WHS issues, inspections of tower, equipment huts and perimeter fencing. Audits of security systems occur annually. Safety climbing systems are accredited on an as-needed basis.

Extensive audits of tower structures occur every two years at which time fixings are checked and (if necessary) re-tightened. Consideration is given to any corrosion. Structural corrosion is remedied as a matter of urgency while non-structural defects may be addressed as part of the programmed maintenance cycle.

The overall conditions of the Telecommunications Facilities have been classified by the Communication and Electrical Services Unit and listed in Table 2, based on the Asset Condition System detailed at Attachment 2. The assessments listed in Table 2 relate to tower structures only. Other Telecommunications Facility structures such as equipment huts and perimeter fences are not included in this assessment.

The results in Table 2 are based on an 11 (0 -10) Category Condition Rating System, with 0 being 'A new asset or an asset recently rehabilitated back to new condition' and 11 being 'An asset that has failed is no longer serviceable and should not remain in service. There would be an extreme risk in leaving the asset in service'. An objective of this AMP is to maintain all Telecommunications Facility towers between the rankings 0 and 4, to ensure a minimum of "good overall condition" and very slight impairment to serviceability.

Only telecommunications facilities with towers owned by Council are included in Table 2.

Condition ranking '0' is only applied to towers less than 3 years of age.

Table 2: Tower Facility Conditions

Condition Ranking	Telecommunication Facility Towers	Year of Construction
0	Nil	-
1	Mt Cambewarra (new)	2007
	Currarong	2006
	Huskisson	2006
2	Sussex Inlet (STP)	1995
	Moeyan Hill (Berry)	2002
	Emergency Management Centre	2002
	Fishermans Paradise	1997
	Sassafras	2000
	Bewong	1996
	Clover Hill (Kangaroo Valley)	2002
3	West Ulladulla	1995
	Deering Street (High Level Reservoir)	age not known
	Pengana Crescent Ulladulla (High Level Reservoir)	age not known
4	Vincentia Reservoir	1997
	Cambewarra (old)	1985
	Red Rocks	before 1980
5	Nil	-
6	Nil	-
7	Nil	-
8	Nil	-
9	Nil	-
10	Nil	-

5. FUTURE DEMANDS AND REDEVELOPMENT NEEDS

Future demand for telecommunications facilities and redevelopment needs is driven by both demand growth and towers reaching the end of their serviceable life. In summary:

- Future demand will primarily be driven by demographic, economic and telecommunications industry factors such as:
 - population growth
 - uptake of technology advances
 - National Broadband Network (NBN) rollout
 - continuing expansion of 4th Generation (4G) carrier networks and
 - changes to the 400MHz frequency spectrum to allow expansion of government two-way radio networks.

These factors will contribute to the growth of networks and telecommunications facility development. Carriers are likely to require 4G tower sites to be developed closer to town centres to meet the rapidly increasing demand for capacity and bandwidth. This strategy should also complement the needs of the NBN which is likely to provide the fibre network to properties in larger population centres, while using tower infrastructure to provide wireless connectivity to small towns, villages or remote areas.

- While renewal of towers on a like for like basis at the end of useful life is the default asset strategy, in many cases a scenario of enhancement and redevelopment is more likely to apply, driven by increasing demand to locate more equipment on Council’s towers. The ability to satisfy this demand is primarily governed by the capacity of the tower and/or the means to strengthen the tower to increase its capacity. Tower capacity is therefore the primary reason towers fall within Condition Ranking 3 and 4 and the most significant reason towers will be redeveloped. The towers listed in Table 4 fall into these lower Condition Ranking categories, and are shown in relative replacement priority order.

Table 3: Telecommunication facilities requiring redevelopment

Site	Reason for Redevelopment	Description of Redevelopment	Condition Ranking
Cambewarra (old)	DA requirements	Remove the old tower and associated buildings once the final occupier of the site has relocated to the new tower.	4
Vincentia Reservoir	Tower reaching end of useful life – capacity reached	Build a new tower of larger capacity to replace existing structure	4
West Ulladulla	Tower reaching end of useful life – capacity almost reached	Build a new tower of larger capacity to replace existing structure. Careful consideration of the placement of this tower will be required, as space on the site may be an issue	3
Red Rocks	Tower is approaching its 40 year life.	Build a new tower of larger capacity to replace existing structure	4

As Table 3 indicates there are three towers which are in need of replacement over the next seven years.

- Vincentia Tower is the highest priority, due to the expected increase in capacity required by carriers and the fact that it can no longer be strengthened or accommodate further equipment. The planning process should occur in financial year 2013/14 to enable preparation for its replacement in 2014/15 financial year.
- West Ulladulla Tower is not expected to have high demand from new customers due to the recent construction of Telstra’s tower at Kings Point, however an increase in capacity is expected to be needed for existing users due to technology upgrades including larger antenna arrays. Preparations for the replacement of West Ulladulla should commence in 2014/15, for its replacement in 2015/16.
- Red Rocks Tower is not expected to be subjected to high growth and it is expected that any required extra capacity may be transferred to the Telstra Tower on the same site. The Tower is approaching its planned life expectancy and its replacement in 2020/21 should be planned.

Table 4 shows details of construction dates, projected service life, proposed upgrades and indicative costs.

Table 4: Tower renewal and upgrade schedule and indicative costs

Site	Current Tower	Date Constructed	Default Replacement Date for renewal only (40 years)	Total Replacement Cost (2013 \$) (like for like)	Tower Capacity	Tower Foundation Capacity	Ability To expand capacity without replacement	Optimal Date of Upgrade / Replacement due to growth	Total Replacement Cost (with increased Capacity) (2013 \$)	Type of upgrade
Red Rocks	38m	1987 (2nd hand)	2027	\$262,120	95%	96%	No	2020	\$285,120	50% increase
Cambewarra	70m	2007	2047	\$1,267,500	31%	31%	N/A	-	\$1,767,500	25% increase
Moeyan Hill	30m	2005	2045	\$142,500	-	-	No	-	\$157,500	25% increase
Clover Hill	30m	2005	2045	\$164,500	-	-	No	-	\$179,500	25% increase
Sassafras	30m	2000	2040	\$139,300	-	-	Yes	-	\$149,300	25% increase
Coonemia	50m	2001	2041	\$222,800	86%	58%	Yes	-	\$257,800	25% increase
Currarong	25m	2006	2046	\$103,320	-	-	Yes	-	\$118,320	50% increase
Huskisson	70m	2005	2045	\$339,300	88%	91%	Yes	-	\$399,300	50% increase
Vincentia	30.5m	1997	2037	\$380,800	100%	95%	No	2014	\$430,800	50% increase
Bewong	55m	1996	2036	\$225,200	86%	90%	Yes	-	\$265,200	25% increase
Sussex Inlet	55m	1995	2035	\$258,200	90%	-	Yes	-	\$298,200	25% increase
Fishermans Paradise	50m	1997	2037	\$334,500	90%	-	Yes	-	\$364,500	25% increase
West Ulladulla	45m	1995	2035	\$296,700	94%	96%	No	2015	\$316,700	50% increase

6. ENHANCEMENT NEEDS

Enhancement needs primarily relate to proposals to install backup generators at key telecommunication facilities. This need was identified following the September 2010 ‘Fathers Day Windstorm’ event debrief, where five facilities were identified as needing emergency power for essential services agencies and carriers. These sites include Bewong, Fishermans Paradise, Vincentia, West Ulladulla and Kings Point.

These facilities accommodate critical infrastructure to support:

- Council’s internal communication needs including microwave networks, two-way radio networks and SCADA (telemetry) systems for its Water operations.
- Other organizations including police, RFS, Government Radio network (GRN).
- Mobile phone and other telecommunication carriers.

Loss of service due to power outages can have a major impact on Council operations as well as services to the community and limit the emergency response by combat agencies. It is proposed that Council will own and maintain the generators and site users pay an ongoing access fee.

The need for the Sassafras solar panel upgrades was previously identified and funding is available in the 2012/13 financial year for this work to be done.

Table 5: Enhancements & Capital Upgrades

Funded Enhancements & Upgrades		
Sassafras	Addition of new solar panel array, upgrade to batteries, hut upgrade or move to increase potential use of site	\$17,000 2012/13
Future Enhancements & Upgrades		
West Ulladulla Fishermans Paradise Bewong Vincentia Reservoir Kings Point	Addition of generator at each site for emergency power on site	\$200,000

7. MAINTENANCE STRATEGIES

The funding needed to achieve a satisfactory programmed maintenance and management of the Telecommunication Facilities is detailed in Attachment 2. The maintenance strategy is based on the following order of priority for assets:

1. Tower safety systems
2. Tower structure
3. Ancillary tower elements

4. Protection of equipment relating to security systems and equipment hut structural integrity
5. Auxiliary power supplies
6. Facility Access
7. All other facility elements

A 5-year maintenance program has been developed, available funding will be allocated to maintenance priorities outlined above.

To maximize the benefits from available funding, an annual programmed maintenance list of works will be prepared and forwarded to the internal service provider Shoaltech for implementation. Maintenance priorities may be revised as determined by the Communication Site Coordinator, based on the objectives of this AMP.

8. CAPITAL WORKS STRATEGIES

8.1. Redevelopment of facilities

Redevelopment strategies are described in Section 5 of this AMP.

8.2. Replacement and enhancement of significant infrastructure

Replacement and enhancement of significant infrastructure will be governed by the following priorities.

- Tower safety systems
- Tower structure
- Ancillary tower elements
- Protection of equipment relating to security systems and equipment hut structural integrity
- Auxiliary power supplies

The lowest acceptable Condition Ranking for any element (see Attachment 3) will be 4 *‘An asset in good overall condition but with some obvious deterioration evident, serviceability would be impaired very slightly’*.

Replacement or enhancement of significant infrastructure will be governed by asset condition and the level of serviceability. The level of serviceability is primarily governed by the capacity of the tower to cater for increased equipment installation. It is expected that tower capacity will be the primary reason that significant infrastructure will be replaced or enhanced.

9. OPERATIONAL STRATEGY

9.1. Operational Arrangements

Telecommunications Facilities are managed by the IT Section Communication Site Coordinator (CSC) while work at the facilities is carried out by Shoaltech under the direction of the CSC. Facilities are subject to two management models, reflecting the location of some tower facilities on Shoalhaven Water sites, managed by Southern Water Services, and other sites managed on behalf of Council’s “General Fund” by Council’s Information Technology Section. Development of a single management structure should be considered with the objective of providing a more streamlined and

efficient process for development, maintenance, operational control and reporting, while retaining current respective asset ownership and financial impacts.

Site users occupy facilities under the terms of a range of agreements, primarily licences and leases (with the majority being licences). Council requires site users to adopt its standard licence or lease (with minor variation requested by users).

The CSC works closely with Council's Property Services Section in relation to developing new facilities and establishing new leases and licenses on Council-owned or controlled sites.

9.2. Operational Programs

There are a number of operational tasks requiring a longer term focus and significant resource allocation. Tasks included in the program are:

- Review of access and induction arrangements
- Radiation Hazard (RadHaz) review program
- Establish licence agreements for all telecommunication facility users.

Costs associated with the above operation tasks will be funded from the growth in the expenses budget as per table 1(a).

10. FUNDING SUMMARY

Communication Facilities management, scheduled maintenance and operational programs, as specified in sections 7 and 9.2, will continue to be funded from the facilities income. These expenses along with energy, licences etc. are shown as part of the total expenses in attachment 1(a) and are shown individually for the two different Facility management structures as well as totals across all facilities.

Attachment 2 shows the projected budget and timeframes for capital expenses such as generator installations, tower renewals and upgrades, however each project will be subject to a Business Case analysis prior to any budget allocation or project implementation. The Business case should address issues such projected extra income, value for money, operational needs and issues related to the DISPLAN.

Enhancements, capital upgrades, tower renewal and capacity upgrades, as specified in sections 5 and 6 , will need to funded from income, borrowings, strategic replacement funds or by setting up a reserve fund. Attachment 4 gives an example on how the introduction of a reserve fund and borrowing at certain milestones could be structured.

11. COMMUNITY CONSULTATION

There are limited opportunities for consultation in regard to programmed maintenance works.

Community consultation in regard to the setup of new sites will be dealt with through the ground lease or license process and/or the Development application process.

12. RISK MANAGEMENT AND WHS COMPLIANCE

Ground lease arrangements where a third party owns and controls the tower infrastructure on Council control land, will detail requirements for risk management and compliance issues.

Council Controlled Communications Sites risk management is delivered under Council's Risk Management Policy, the Enterprise Risk Management Framework and the Business Continuity Plan.

Council's WHS Policy, the WHS Risk Management Policy and WHS Safety Manual provide the framework for all activities on Council-controlled sites.

Site Clients can only authorise personnel climbing Council towers if they are duly qualified and experienced and have been inducted to the site within the previous 2 years by Council's Shoaltech staff. Council's Shoaltech unit will maintain all site induction records.

Shoaltech is to develop a Web based system for inducting client's staff or contractors who wish to enter or work within a Council controlled tower site, this system will not replace the need for onsite induction for climbing as set out above. Once the Web system is in place, anyone wishing to enter a Council Controlled site must be authorised and must have successfully completed the web based site induction process.

Clients may authorise work on site which does not require climbing if their site access agreement allows such access and provided they carry out risk assessment and mitigation processes in line with their WHS procedures.

All Site occupiers are to have site occupation agreements.

Council-controlled sites that have Communication facilities owned and operated by others are managed under ground lease only agreements.

13. SERVICE DELIVERY MODEL

Maintenance activities will be undertaken by Council's internal service provider Shoaltech, or under contract, depending on availability of resources, skills required and cost considerations. Works will be performed in accordance with this Asset Management Plan. Service delivery will be monitored by unit cost of repairs, random audits of quality and achievement of the specified annual programmed maintenance.

The provision of new Telecommunications Facilities will generally be undertaken in accordance with an adopted processes described in the Telecommunications Facility and Networking Policy.

Projected Management and Maintenance Program expenditure (Table 1a) include:

- Site Management and customer billing
- New Site negotiations and leases development
- Utility costs
- Maintenance
- Structural Repairs
- Tower and Safety system checks
- Security and System control
- Multicoupling
- Cooling
- Site Setup
- Radiation Hazard testing.

14. ASSET DISPOSAL

The opportunity to dispose of telecommunication's assets (remove and not replace) is minimal and not assumed to occur for the purposes of this AMP. However the need to retain assets will be reviewed on an individual case basis as the need for replacement is identified.

15. PERFORMANCE MONITORING

The following Key Performance Indicators will be used to measure key outcomes from this Asset Management Plan and shall be measured as at 30th June each year –

- Actual vs. projected income and costs - target, within 10% of projection.
- Tower capacity-target, below 95% except where otherwise documented.

16. REVIEW

The Asset Management Plan shall be reviewed every three years and the outcomes reported to Council.

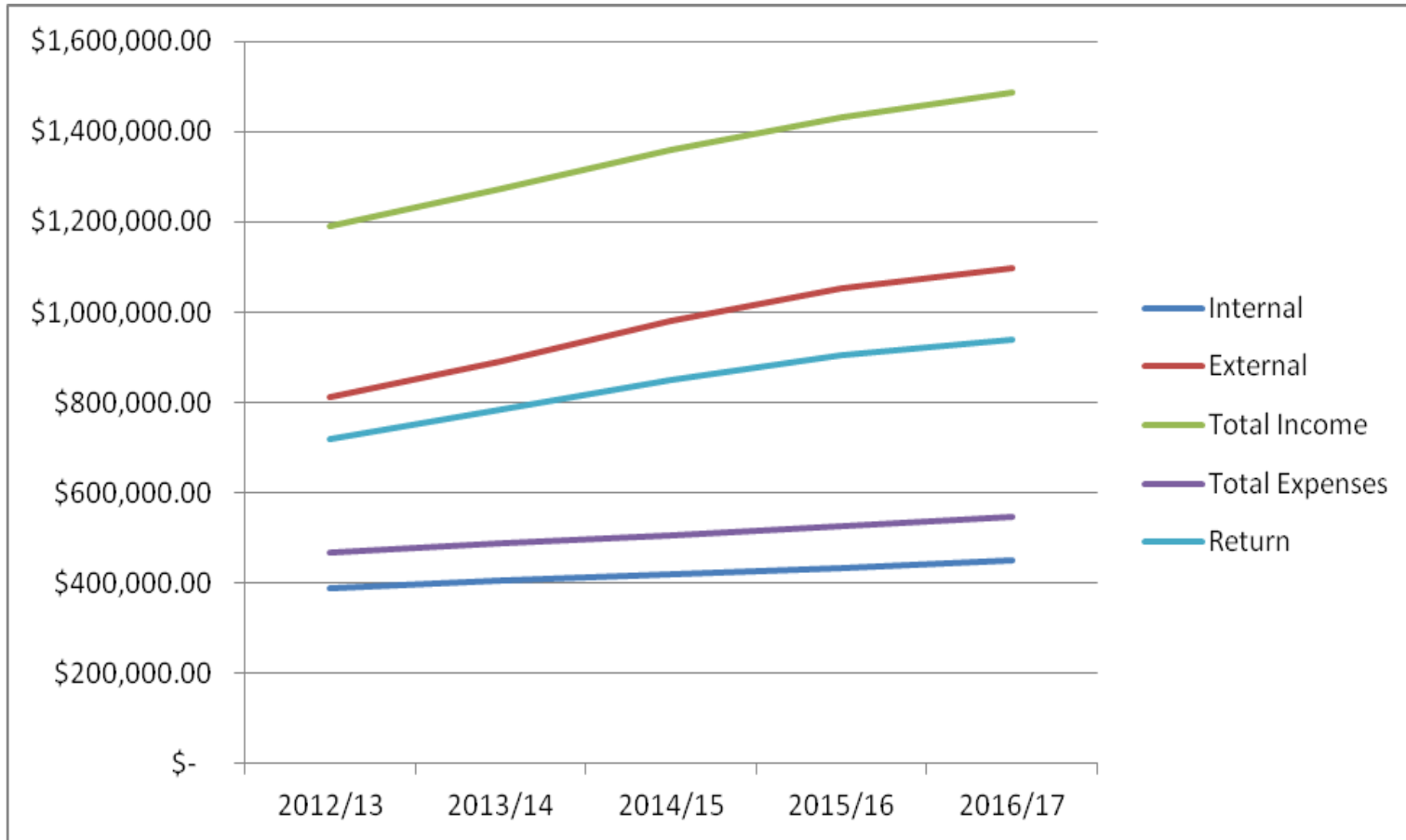
Attachment 1(a) – 5-year income and expenditure projection

General Fund	2012/13	2013/14	2014/15	2015/16	2016/17
Internal	\$ 171,172.56	\$ 178,019.46	\$ 183,360.05	\$ 188,860.85	\$ 194,526.67
External	\$ 462,878.90	\$ 509,166.79	\$ 560,083.47	\$ 576,885.97	\$ 594,192.55
Total income	\$ 626,365.16	\$ 670,210.72	\$ 713,774.42	\$ 735,187.65	\$ 757,243.28
Total Expenses	\$ 244,959.38	\$ 254,757.75	\$ 264,948.06	\$ 275,545.99	\$ 286,567.83
SWS	2012/13	2013/14	2014/15	2015/16	2016/17
Internal	\$ 217,991.28	\$ 226,710.93	\$ 235,779.37	\$ 245,210.54	\$ 255,018.96
External	\$ 347,880.71	\$ 382,668.78	\$ 420,935.66	\$ 471,447.94	\$ 495,020.33
Total Income	\$ 562,672.54	\$ 602,059.62	\$ 644,203.79	\$ 695,740.10	\$ 727,048.40
Total Expenses	\$ 223,916.79	\$ 232,873.47	\$ 242,188.40	\$ 251,875.94	\$ 261,950.98
Total Tower Income	2012/13	2013/14	2014/15	2015/16	2016/17
Internal	\$ 389,163.84	\$ 404,730.39	\$ 418,895.96	\$ 433,557.32	\$ 448,731.82
External	\$ 810,759.61	\$ 891,835.57	\$ 981,019.13	\$ 1,054,595.56	\$ 1,096,779.38
Total Income	\$ 1,189,037.70	\$ 1,272,270.34	\$ 1,358,148.59	\$ 1,432,846.76	\$ 1,486,578.52
Total Expenses	\$ 468,876.17	\$ 487,631.22	\$ 507,136.47	\$ 527,421.93	\$ 548,518.80
Return	\$ 720,161.53	\$ 784,639.12	\$ 851,012.12	\$ 905,424.84	\$ 938,059.71

Assumptions:

1. Expenses include scheduled maintenance and operational programs, energy and licences etc..
2. Continued strong growth in income - 7% for years 2012/13 to 2014/15 due to continued rollout of mobile technology.
3. 2015/16 projected income 6% due to West Ulladulla tower coming off lease free period from handover of tower.
4. Beyond 2015/16 projected income is 4%.
5. Expenses are forecast at 4% increase per year.

Attachment 1(b) – 5-year income and expenditure projection graph



Attachment 2 – Tower Renewal, Enhancement and Upgrades cost projections

TOTAL TOWER ASSESTS	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Total Income	1,189,038	1,272,270	1,358,149	1,432,847	1,486,579	1,546,042	1,607,883	1,672,199	1,739,087	1,808,650	1,880,996	1,956,236	2,034,485
Maint and Management costs	468,876	487,631	507,136	527,422	548,519	564,974	581,924	599,381	617,363	635,884	654,960	674,609	694,847
CASH RETURN	720,162	784,639	851,012	905,425	938,060	981,067	1,025,960	1,072,817	1,121,724	1,172,766	1,226,036	1,281,627	1,339,638
UPGRADES	Sassafras Solar	Vincentia startup costs	Vincentia replacement & West Ulladulla startup costs	West Ulladulla Replacement				Redrock startup costs	Redrocks Replacement				
Vincentia		70,000	361,000										
West Ulladulla			70,000	247,000									
Redrocks								70,000	285,000				
Sassafras	17,000												
Generators			50,000	50,000	50,000	50,000							
TOTAL CAPEX NEEDED	17,000	70,000	481,000	297,000	50,000	50,000	-	70,000	285,000	-	-	-	-

Attachment 3 – Asset Condition System

Rating	Rating Description
0	A new asset or an asset recently rehabilitated back to new condition.
1	A near new asset with no visible signs of deterioration often moved to condition 1 based upon the time since construction rather than observed condition decline.
2	An asset in excellent overall condition. There would be only very slight condition decline but it would be obvious that the asset was no longer in new condition.
3	An asset in very good overall condition but with some early stages of deterioration evident, but the deterioration still minor in nature and causing no serviceability problems.
4	An asset in good overall condition but with some obvious deterioration evident, serviceability would be impaired very slightly.
5	An asset in fair overall condition deterioration in condition would be obvious and there would be some serviceability loss.
6	An asset in Fair to poor overall condition. The condition deterioration would be quite obvious. Asset serviceability would now be affected and maintenance cost would be rising.
7	An asset in poor overall condition deterioration would be quite severe and would be starting to limit the serviceability of the asset. Maintenance cost would be high.
8	An asset in very poor overall condition with serviceability now being heavily impacted upon by the poor condition. Maintenance cost would be very high and the asset would at a point where it needed to be rehabilitated.
9	An asset in extremely poor condition with severe serviceability problems and needing rehabilitation immediately. Could also be a risk to remain in service.
10	An asset that has failed is no longer serviceable and should not remain in service. There would be an extreme risk in leaving the asset in service.

Shoalhaven City Council
Asset Management Plan – Telecommunication Facilities

Attachment 4 – Tower Renewal, Enhancement and Upgrade - Reserve funding Options and Projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
TOTAL CAPEX NEEDED	\$ 17,000.00	\$ 70,000.00	\$ 481,000.00	\$ 297,000.00	\$ 50,000.00	\$ 50,000.00	\$ -	\$ 70,000.00	\$ 285,000.00	\$ -	\$ -	\$ -	\$ -
% OF INCOME TRANSFERED TO RESERVE	6%	8%	10%	10%	10%	10%	10%	10%	10%	6%	6%	6%	6%
\$ amount of income to reserve	\$ 71,342.26	\$ 101,781.63	\$ 135,814.86	\$ 143,284.68	\$ 148,657.85	\$ 154,604.17	\$ 160,788.33	\$ 167,219.87	\$ 173,908.66	\$ 108,519.00	\$ 112,859.76	\$ 117,374.15	\$ 122,069.12
Reserve Without financing													
Reserve yearly addition	\$ 54,342.26	\$ 31,781.63	-\$ 345,185.14	-\$ 153,715.32	\$ 98,657.85	\$ 104,604.17	\$ 160,788.33	\$ 97,219.87	-\$ 111,091.34	\$ 108,519.00	\$ 112,859.76	\$ 117,374.15	\$ 122,069.12
RESERVE BALANCE	\$ 54,342.26	\$ 86,123.89	-\$ 259,061.25	-\$ 412,776.58	-\$ 314,118.72	-\$ 209,514.56	-\$ 48,726.23	\$ 48,493.64	-\$ 62,597.70	\$ 45,921.30	\$ 158,781.07	\$ 276,155.22	\$ 398,224.34
Reserve with Financing													
Borrowings 5% interest and principal 10yrs	Loan 1		\$ 350,000.00										
	Loan 2			\$ 150,000.00									
Loan 1 payments			\$ 45,326.00	\$ 45,326.00	\$ 45,326.00	\$ 45,326.00	\$ 45,326.00	\$ 45,326.00	\$ 45,326.00	\$ 45,326.00	\$ 45,326.00	\$ 45,326.00	\$ -
Loan 2 payments				\$ 19,425.00	\$ 19,425.00	\$ 19,425.00	\$ 19,425.00	\$ 19,425.00	\$ 19,425.00	\$ 19,425.00	\$ 19,425.00	\$ 19,425.00	\$ 19,425.00
RESERVE BALANCE WITH FINANCING	\$ 54,342.26	\$ 86,123.89	\$ 45,612.75	-\$ 22,853.58	\$ 11,053.28	\$ 50,906.44	\$ 146,943.77	\$ 179,412.64	\$ 3,570.30	\$ 47,338.30	\$ 95,447.07	\$ 148,070.22	\$ 250,714.34