



Catalina Estate Sustainability Initiatives

Phase 1 Review and Recommendations Report

17 September 2011



Executive Summary

This report provides a detailed analysis of the Catalina Sustainability Initiatives Plan (SIP), and recommendations as to the feasibility of the SIP Initiatives to be implemented to address EnviroDevelopment (ED) Standards, with the intention of achieving certification in selected Elements.

The Catalina development area is under the control of the Tamala Park Regional Council (TPRC). The Satterley Property Group (SGP) is the appointed Project Manager for the development delivery, sales and marketing of the Catalina Estate.

On completion Catalina will comprise a predominately residential area with commercial, retail, business, educational and community facilities, and with strong access to public transport and regional facilities.

The TPRC has also committed to incorporating environment sustainability in the land, built form and occupancy and use phases of development. These initiatives are described in the SIP.

This report provides an analysis of the 30 initiatives included in the SIP. A number of initiatives have already been substantially addressed through the approved Local Structure Plan and Stage 1 sub-division. The focus of this report is to provide an analysis of the initiatives in the context of ED with particular emphasis on solar energy and a groundwater fed 3rd pipe water system.

The findings of this analysis show that five of six EnviroDevelopment Elements can be achieved, contingent on addressing key recommendations. The five Elements selected are: Energy, Water, Waste, Community and Ecosystem.

Listed below are the recommendations for each of the selected ED Elements.

EnviroDevelopment - Energy

Recommendations: (in addition to the supported initiatives listed in the SIP)

- Incorporate energy efficient lighting on streets and POS, as a minimum as a trial in Stage 1
- Mandate climate responsive passive solar design, such as living area orientation and cross-flow ventilation
- Provide incentives for photovoltaic (PV) systems and direct load control devices
- Promote high efficiency appliances and fixtures through design guidelines
- Investigate potential for direct load control devices installed on household appliances and linked to the local Western Power sub-station
- Implement a Sustainable Living and Behaviour Change Coaching program to address end-user education, continuous improvement and verification of targets

EnviroDevelopment - Water

Recommendations: (in addition to the supported initiatives listed in the SIP)

- Implement a 3rd pipe scheme for garden irrigation requirements
- Investigate opportunities to extend the 3rd pipe scheme for in-house toilet and laundry uses
- Promote high efficiency fittings and fixtures through design guidelines
- Ensure open space and street planting is predominantly local native and drought resistant
- Implement a Sustainable Living and Behaviour Change Coaching program to address end-user education, continuous improvement and verification of targets

EnviroDevelopment - Waste

Recommendations:

- Develop a detailed Waste Management Strategy through the services of a Waste Management Specialist ensure on-site recycling activities through all three phases of development
- Engage a Waste Management Recycler, with proven recycling credentials, to undertake on-site waste management and recycling, including through a central recycling centre on-site for reuse by residents and other builders
- Implement a Sustainable Living program to address end-user education

EnviroDevelopment - Community

Recommendations / Actions: (in addition to the supported initiatives listed in the SIP)

- Promote the sustainability vision and apply community development and engagement initiatives to create a strong vibrant and sustainable community
- Ensure community feedback has been considered and incorporated
- Undertake and maintain on-going community engagement, with a focus on sustainable living
- Develop a community education for sustainable living program – with a focus on direct community engagement, behaviour change and demand management, data collection and goal setting to achieve continuous improvement and verify targets
- Ensure inclusion of pedestrian and cycle options such as dedicated and connected paths, secure bicycle park facilities, and public transport options
- Ensure provision of affordable housing product to 10percent of lots/dwellings
- Include indoor environment quality (IEQ) criteria in built form design guidelines

EnviroDevelopment - Ecosystem

Recommendations / Actions:

- Undertake a detailed assessment of all approvals (LSP, LWMS), design approaches and initiatives against the ED Ecosystems standards to confirm compliance and proceed toward certification

Design & Accreditation

Recommendation:

- Progress fulfilling the requirements for ED certification in Energy, Water, Waste, Community and Ecosystem

Financial Incentives
Recommendations/Actions

Category / Element	Objective	Initiative	Incentive amount	Rebate Received
Water	20 percent reduction in potable water consumption	Groundwater fed 3 rd pipe system	\$3,000 per lot	NA – installed prior to purchase
Energy	20 percent reduction in GHG emissions	1.5kW PV system	\$3,000 on 50 percent of lots	Upon completion of the home
	Peak Load reduction / Behaviour Change Coaching	Direct Load Control Devices / Behaviour Change Demand Management Coaching	\$1,000 on 50 percent of lots or \$2,000 on 25percent of lots	Upon occupancy of the home

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Introduction

ActiveSustainability has been appointed to provide sustainability consultancy services for the Catalina development. This role is contracted to the Tamala Park Regional Council (TPRC), and reports directly to the Satterley Property Group (SPG) as Project Manager for Catalina.

Scope of the Report

The TPRC requires an analysis of the current draft Sustainability Initiatives Plan (SIP) for the Tamala Park Project, now marketed as Catalina, and recommendations as to their feasibility for implementation to address EnviroDevelopment (ED) Standards with the intention of achieving certification in selected categories or elements.

The full scope is to be developed in three phases:

- Phase 1: Review the draft Sustainability Initiatives Plan and provide recommendations
- Phase 2: Revised Sustainability Initiatives Plan
- Phase 3: EnviroDevelopment Certification

Phase 1 will be addressed in the report.

Key tasks for Phase 1 include:

- Review the draft SIP with particular emphasis on benefit of Solar Energy and 3rd Pipe Water system
- Investigate minimisation of ecological & carbon impact by promoting initiatives in water sensitive urban design, energy efficiency, recycling accessibility, planning & building design in accordance with targets set in SIP
- Investigate use of alternative water supply
- Provide advice on implementation issues for selected sustainability initiatives and the likely cost and market acceptance

An indicative timetable for the delivery of Phases 1, 2 and 3 to meet the Management Committee timetable and the proposed project program is summarised as follows:

- | | |
|---|---------------------------|
| - Start Bulk Earthworks (subject to SEWPC & WAPC approvals) | end August 2011 |
| - Preliminary review of the draft SIP | early September 2011 |
| - Draft Revised Sustainability Initiatives Plan | 13 September 2011 |
| - Management Committee meeting | 22 September 2011 |
| - Start Stage 1 Civil Works | early November 2011 |
| - Preparation for EnviroDevelopment Certification | October 2011-January 2012 |
| - Stage 1 Titles | May 2012 |

Context and Background

The Catalina development area is under the control of the Tamala Park Regional Council (TPRC) which comprises the following participant local governments: Cities of Joondalup, Perth, Stirling and Wanneroo; and Towns of Cambridge, Victoria Park and Vincent.

The TPRC vision for the development is 'to create an urban center for choice, sustainability, community and opportunity from the land.' This vision is to be given effect through a number of key principles, which are:

- Incorporate environmental responsibility
- Enable effective community development and wellbeing
- Foster local economic development and employment opportunities
- Enhance transport (including public transport) opportunities
- Facilitate efficient energy use and production
- Minimise waste and water consumption
- Provide healthy profits for its landowners
- Produce a quality development demonstrating the best urban design and development practice

Located in the northern suburbs of Perth, Catalina is effectively an infill development area: to the immediate north are Mindarie and Clarkson, and to the south Kinross and Burns Beach. The land is bounded by Neerabup road to the north, the Mitchell Freeway reservation and Neerabup Regional Park to the east, the Tamala Park landfill facility to the south and an existing coastal foreshore reserve and the Indian Ocean to the west. This lends the estate immediate access to established community services, amenities, transport routes and infrastructure which can be leveraged to the advantage of the development. Significantly, the Ocean Keys District Centre and the Clarkson Transit Centre are immediately to the north of the site.

The actual site presents good opportunities to address achievement of the project sustainability objectives. As described in the Tamala Park Local Structure Plan the overall land-form supports good community design as well the environment design outcomes in the form of lot shape and orientation to achieve good northern solar access and to take advantage of cooling coastal breezes.

Availability of good quality groundwater for a third pipe system is another benefit which supports Catalina being recognised as a leader in sustainable urban development.

The completed project will contain:

- | | |
|--------------------------|--------------------------|
| - Total lots | approximately 2,200 lots |
| - Dwellings | 2,600 dwellings |
| - Average density | 14.5 dwellings/ha |
| - Population | approximately 6,500 |
| - Primary schools | 1 |
| - Local/ Village Centres | 1 |
| - Mixed use nodes | 3 |

Sustainability Initiative Plan

SPG in its 'Request for Proposal' submission to the TPRC in May 2010, proposed a suite of sustainability strategies and initiatives (developed by ActiveSustainability) that were consistent with the objectives as described in the Tamala Park Local Structure Plan. The specific initiatives put forward by SPG addressed the full development lifecycle by considering development planning and design, civil works and building construction, and occupancy and use. The initiatives were categorised into Estate Energy, Housing Energy, Water Conservation, Waste Management, Residents & Occupants, Transport and Development Design Assessment & Rating.

The Sustainability Initiatives that were assessed for consideration are as follows:

Estate Energy:

1. Low energy long life LED lights for use in street lights and open space lighting
2. Uptake of solar energy produced from a proposed centralized solar collector on Mt Tamala
3. Geothermal energy for estate heating and cooling
4. Wind Farm
5. Landfill Methane Gas Extraction

Housing Energy:

6. Main living area orientation to the north to optimize winter solar penetration and natural lighting
7. Floor plans and location of openings to optimize cross-flow ventilation
8. Target of 6 star AccuRate certification for all dwellings
9. Solar water heating with gas booster or heat pump systems
10. Min 1.5kW grid interactive photovoltaic (PV) array

Water Conservation:

11. Achieve the water consumption target of 100 kL/person/year, including not more than 60kL/person/year of scheme water
12. Implement a groundwater fed secondary 3rd pipe water scheme for non-potable uses such as irrigation of public and private open space and extending to toilet flushing
13. Provide for future water policy changes to allow the reuse of treated wastewater through a centralized managed aquifer re-charge scheme. In anticipation of this, SPG will ensure the 3rd pipe non-potable scheme is designed to allow easy connection to such a scheme
14. Landscaping and urban design to optimize at source direct storm-water infiltration for groundwater recharge, achieving a net water balance across the development area
15. Best practice in water sensitive urban design such as minimizing hard stand and permeable paving in open spaces, bio-filtration swales, and slotted pipes
16. Implementation of design criteria for ALL single residential dwellings – including minimum 2.5kl rainwater tank plumbed to laundry and also as a supplement to water heating, high efficiency fittings and fixtures, toilets to be a minimum 6 star WELS rated and taps and showers shall be min 3 star WELS rated
17. Waterwise garden and Waterwise controlled irrigation scheme

Waste Management:

18. Support that construction management criteria will be written into all contracts to ensure resource efficiency, waste minimization, and reuse or recycling of excess materials

19. SPG to build upon existing relationships with building companies to ensure waste management opportunities are optimised

Residents and Occupants:

20. The City of Wanneroo operates a verge side pick-up recycling programs that capture and recycle >90percent of household wastes
21. Significant opportunities exist for residents and occupants to reduce their waste through a number of localized and lot based initiatives such as composting of food and green waste for re-use on private or community gardens
22. Establish community garden
23. Provide fiber to the home (FttH)
24. Cede Housing (affordable built form product)

Transport:

25. Examine the potential for light rail
26. Examine potential for community bus service
27. Plan for early provision of PTA services

Design and Accreditation:

28. Adopt the City of Wanneroo Smart Growth policy and tool, to satisfy all current planning and policy requirements
29. Apply relevant development criteria of the EnviroDevelopment standard for Tamala Park
30. Identify areas within development that would benefit from Site Responsive Housing design

On selection as the successful proponent, the sustainability initiatives were further examined to ensure they met the TPRC objectives for the project and to understand implications for implementation and anticipated costs. All sustainability initiatives from the SPG RfP submission and those included in the LSP were assessed to enable the TPRC to consider which initiatives could be implemented, which were to be excluded and which initiatives require further investigation and costing. This report resulted in the draft SIP which included recommendations and actions for all initiatives.

All initiatives were evaluated and categorized to determine their feasibility for implementation. The four categories used are:

1. Feasible within current development industry best practice
2. Feasible with financial support from the project
3. Require further detailed examination
4. Unfeasible or uneconomic

The results of this review are summarised as follows:

- A total of 30 sustainability initiatives were assessed
- 13 are considered to be feasible to be introduced through design and construction
- 10 can be implemented with financial support from the project
- 5 will require more detailed investigation and cost analysis
- 2 (wind farm & light rail) are not considered feasible for the project

The Tamala Park – Catalina Sustainability Initiatives Plan Report (March 2011) is included as Appendix 1)

Budget Allowances

Subsequent to the draft SIP, the project cash flow budget provided a financial allowance for the implementation of a number of environmental sustainability initiatives. This included the following:

- \$5,000 per lot for general sustainability initiatives, such as 3rd pipe, rainwater tanks, PV etc
- \$4,500 per lot for water wise landscape package to the front yard
- 2,453 per lot for fibre to the home (FTTH)

All proposed initiatives that require a financial incentive or rebate will need to be costed to fit within the budgeted allowance of \$5,000 per lot.

EnviroDevelopment (ED) Standards

The review of the draft SIP and recommendations for implementation will be framed in-line with ED Standards with the intention of aiming for certification. This will have the benefit of enabling the TPRC to focus on what initiatives to pursue in order to achieve the desired numbers of “leaves”.

ED represents the current industry preferred development area or estate scale rating tool for WA. It is an independent, voluntary certification system that provides accreditation to land developments that aim to go beyond minimum practice standards and promote more sustainable urban developments. The ED system addresses performance criteria and certification in six areas. These are: Ecosystem, Waste, Energy, Materials, Water and Community.



ED sets the bar above current practice and targets the top 10-20 percent of urban development projects. The objectives of ED are to provide consumer awareness on sustainability, promoting adoption of sustainability principles in project planning, and to communicate sustainability.

As many of the proposed sustainability initiatives for Catalina are consistent with ED criteria, it provides a useful framework by which to determine leading practice initiatives that can be implemented to ensure Catalina is at the forefront of urban development in WA, and will be recognised as such.

The preliminary analysis of the proposed sustainability initiatives against the ED Standards shows that Catalina addresses and can potentially achieve certification in four of the six elements. The Waste Element has potential to be achieved if some proposed initiatives are strengthened.

EnviroDevelopment Element	Potential to achieve certification
Ecosystem	High
Waste	Medium
Energy	High
Materials	Low - Medium
Water	High
Community	High

The Stage 1 preliminary review will provide confirmation of this analysis and advice on required initiatives to achieve certification against each respective Element.

Analysis Review and Recommendations

The following section provides the analysis of the 30 initiatives identified in the SIP against the requirements of the ED Standards. This analysis is structured using the same categories and in the same order as the initial SIP. These are:

- Estate Energy and Housing Energy
- Water Conservation
- Waste Management
- Residents & Occupants and Transport
- Development Design Assessment & Rating

This analysis provides a statement clarifying the relationship with the ED Standards, a summary of the relevant ED Element, and a detailed discussion of the relevant initiative with regard to addressing the ED performance targets and criteria. Key recommendations are then provided for implementation to achieve ED certification.

ESTATE ENERGY			
Sustainability Initiatives Plan			Relationship to EnviroDevelopment
	Initiative	Recommended Action	
1.	Low energy long life LED street and open space lighting	Investigate with City of Wanneroo for application, possibly as a trial	Energy - Essential criteria is provision of efficient lighting in common areas. Incorporating energy efficient lighting on streets and POS will provide significant leadership in this area
2.	Uptake of solar energy produced from the proposed centralized solar collector at Mindarie Regional Council facility (Mt Tamala)	Defer – no further action at this time	NA
3.	Geothermal energy for estate heating and cooling	Defer – no further action at this time	NA
4.	Wind Farm	Not supported - no further action	NA
5.	Landfill Methane Gas Extraction	Commence discussion to determine possibility	NA
HOUSING ENERGY			
6.	Main living area orientation	Supported - incorporate into DG's	Energy - Key criteria in GHG reduction Community – Key criteria in Indoor Environment Quality
7.	Optimise cross-flow ventilation		
8.	6 Star AccuRate	Supported - incorporate into DG's	NA: 6 star building performance rating will be mandated in the Building Codes of Australia as at 1 May 2012
9.	Solar water heating (SWH) with	Incorporate into DG's	Energy - Key criteria in GHG reduction

	gas booster or heat pump systems	w- incentive	
10	Min 1.5kW grid interactive photovoltaic (PV) array	Incorporate into DG's w- incentive	Energy - Key criteria in GHG reduction

EnviroDevelopment - Energy

TARGET: Implement measures that would optimise energy reduction and achieve 20 percent reduction in greenhouse gas (GHG) production across the development over and above current regulatory requirements.

ESSENTIAL ACTIONS:

- Development must consider solar orientation of lots and solar access to buildings.
- Development shows evidence that shielding from hot summer sun; ventilation and topography have been considered and addressed.
- Measures aimed at specifically reducing peak load, including use of off-peak loads at masterplanning level
- Efficient lighting in common areas, such as through utilising solar power or fluorescent fittings, etc
- Demonstrate measures to assist with community education
- Meet requirement for GHG reduction – through a range of options

Discussion:

The performance target for the ED Energy Element is to optimise energy reduction and achieve 20 percent reduction in greenhouse gas (GHG) production across the development over and above current regulatory requirements. This includes measures at masterplanning, within the public domain, peak loads and householder education.

A number of these requirements have been adequately addressed, either through planning design and/or through SIP initiatives. These include solar orientation of lots through local structure planning and in the Stage 1 sub-division design; and energy efficient lighting in the public domain – refer SIP Initiative 1.

ED states the requirement for reduction in GHG emissions by 20 percent can be met through a range of options such as renewable energy, energy efficient appliances and fixtures, climate responsive design, and end-user education and demand/behaviour management. Importantly this 20 percent reduction must be met through initiatives that are over and above current regulatory requirements, such as 5 Star Plus which mandates energy efficient water heaters, and 6 star rated building performance, which will become mandatory on 1 May 2012.

SIP Initiatives # 6, 7, 8, 9 and 10 all support improved energy efficiency and reduced GHG emissions from the home, however these require closer scrutiny to determine the most effective initiatives to achieve the 20 percent reduction.

The current average household energy consumption in Perth is approximately 14 - 17 kWh per day, based on an average residential home in Perth of 270m². 14.7 kWh is the baseline value used by EnviroDevelopment. A 20 percent reduction is equal to ~3kWh per day.

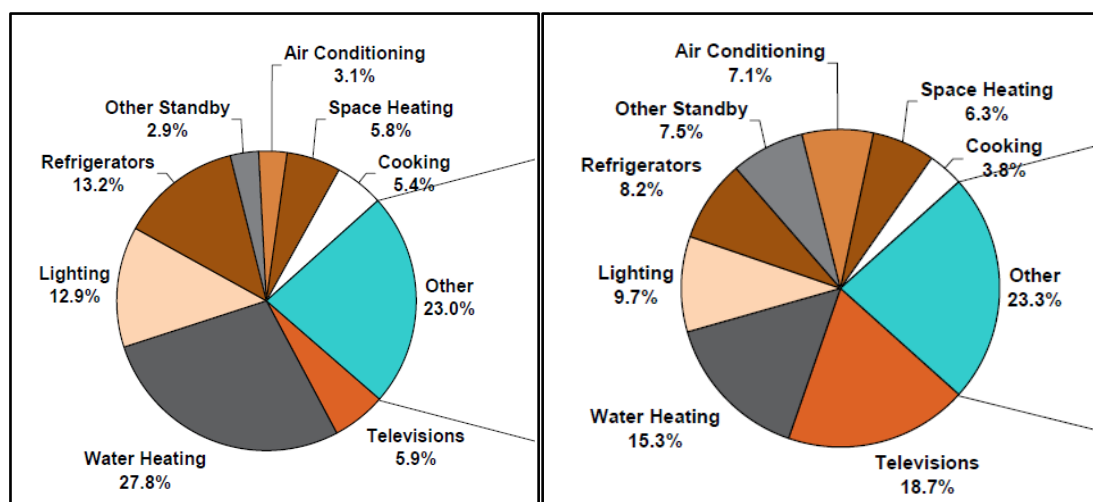
A smaller 1 or 2 bed home, with an area of 170-190m² may have a consumption of approximately 10 - 12 units per day. While house size is a key factor in reducing overall consumption, other factors

irrespective of house size are house design, efficiency of appliances and fixtures and lifestyle behavioural habits.

The Catalina Stage 1 sub-division has lots ranging in size of 380-530m² (average 455m²) for standard residential lot to 225-350m² (average 290m²) for narrow frontage cottage lots, which are approximately 30 percent of the total. Based on these lot sizes and an average building footprint of approximately 60 percent of lot area, the homes may vary from approximately 170m² - >300m².

The passive design features described in SIP Initiatives 6 and 7 will influence energy consumption and demand within the home through reduced lighting and air-conditioning. These are however greatly dependent on user behaviour: i.e. switching off lights and heaters. These passive design features also have beneficial impact on indoor environment quality (IEQ) and occupant health and wellbeing, which are features of the Community element.

There are significant opportunities to reduce energy consumption through high efficiency fixtures and appliances. The table below shows electricity consumption by household appliance in 2000, and projected consumption in 2020. This research found the 'dramatic recent and forecast rise in energy consumption by televisions represents the largest energy use and percent increase in energy, driven by larger TV sizes, increased viewing hours and greater levels of ownership' and that 'further sizeable increases are forecast in air-conditioning through 2010 – 2020.'



Electricity consumption by major residential appliances in 2000

Forecast electricity consumption by major residential appliances in 2020

Building Our Savings: Reduced Infrastructure Costs from Improving Building Energy Efficiency, Institute for Sustainable Futures & Energetics, 2010

The continued increase in TV and air-conditioning use also impacts peak load demand, especially in summer months. Peak load is discussed on the following page.

The SIP Initiatives which directly focus on GHG and energy reduction are PV and SWH systems.

A 1.5kW PV system, which is now the common average size, produces an average 6-8kWh/day over a 12 month cycle, representing between 30 – 50 percent reductions in average household energy use. This therefore implies if approximately 50 percent of homes install a 1.5kW PV array, the GHG reduction of 20 percent across the development will be achieved.

The rapid uptake of roof-top PV in recent years - at the end of 2009/10 there were over 20,000 grid-connected PV systems installed in WA - has been influenced by generous federal government rebates, known as Renewable Energy Certificates (REC's), and also state-sponsored feed-in tariffs. REC's, which amounted to approximately \$8,000 of a 1.5kW PV system, allowed for the installation of between \$2,500 for an entry level standard to \$4,500 for a higher quality system. Both REC's and the feed-in tariffs have recently been rolled back and the market is now readjusting. Even-so, there are entry-level 1.5 kW systems being advertised for \$3 – 3,500.

The average percentage of household energy use for water heating is estimated a 16 percent, however this figure is difficult to verify due to an absence of recent data and SWH's increased market share in WA in recent years. Energy efficient hot water systems, including SHW's are now mandated in the BCA 5 Star Plus provisions. Other allowable systems are a 5-star rated gas hot water system and a heat pump hot water system. The SWH's have the lower GHG co-efficient compared to the other allowable fossil fuelled hot water systems, and are therefore an important form of renewable energy providing a significant benefit in reducing overall GHG emissions.

There are two other criteria to be addressed to meet the ED Energy requirements. These are reductions in peak load demand and demand/behaviour management, both of which are inter-related and are associated with end-user education and also verification of the target reduction.

Peak Load is a critical issue in the supply and cost of electrical energy in WA. Peak load refers to the increased demand for electricity, mainly during peak summer daylight and evening hours, generally 3 – 9pm, which is when families are at home using multiple appliances, including air-conditioning and TV's in summer. This 'peak' demand requirement places significant strain on the electricity grid. Western Power estimates the cost to meet peak load demand for a few hours per day in summer is greater than 80percent of investment cost in supply. Further-more the peak load demand is projected to increase due to increase in the use of TV's and air-conditioners.

Strategies for peak load reduction in residential areas include implementing demand management through direct load control devices fitted to fixtures and appliances such as air conditioners and pool pumps and also end-use behaviour change education programs. The effectiveness of direct load control devices are dependent on wireless transmitters installed on local electricity sub-stations, which requires agreement with Western Power.

Existing successful models for end-use education or sustainable living programs include direct community engagement programs such as Living Smart, and behaviour change coaching support to address household living, energy, water, waste, gardens and healthy lifestyle, as well as data collection and goal setting to achieve continuous improvement and verify targets.

The Behaviour Change Coaching programs, which are operated through a centralised tele-centre using trained behaviour change coaches, provide an efficient cost effective mechanism to address on-going 'end-user' education, including demand management, as well as verification of targets. The verification is a critical ED component to provide sufficient empirical data for annual re-certification.

These are discussed in more detail below under Residents and Occupants / Community.

Recommendations: (in addition to the supported initiatives listed above)

- Incorporate energy efficient lighting on streets and POS, as a minimum as a trial in Stage 1
- Mandate climate responsive passive solar design, such as living area orientation and cross-flow ventilation
- Provide incentives for PV and direct load control devices
- Promote high efficiency appliances and fixtures through design guidelines
- Investigate potential for direct load control devices installed on household appliances and linked to the local Western Power substation
- Implement a Sustainable Living and Behaviour Change Coaching program to address end-use education, continuous improvement and verification of targets

WATER CONSERVATION			
Sustainability Initiatives Plan			Relationship to EnviroDevelopment
	Initiative	Recommended Action	
11	Achieve the water consumption target of 100 kL/person/year, including not more than 60 kL/person/year of scheme water	Target to be adopted, however cost impact to be assessed - linked to 12, 13, 16 & 17	Water – Essential criteria. ED requires a 20percent reduction in 'in-lot' potable water use beyond regulatory measures.
12	Implement a groundwater fed 3rd pipe water scheme for non-potable uses such as irrigation of public and private open space and extending to toilet flushing.	Cost impact to be assessed – linked to 16 & 17	
13	Provide for future water policy changes to allow the reuse of treated wastewater through a centralized managed aquifer re-charge scheme.	In anticipation of this, SPG will ensure the 3 rd pipe non-potable scheme is designed to allow easy connection to such a scheme	
14	Landscaping and urban design to optimise at source direct storm-water infiltration for groundwater recharge	Supported – include in UWMS	Ecosystem – Essential criteria
15	Best practice in water sensitive urban design such as minimizing hard stand and permeable paving in open spaces, bio-		

	filtration swales, and slotted pipes		
16	Minimum 2.5kl rainwater tank plumbed to laundry and water heating, high efficiency fittings and fixtures, toilets min 6 star and taps and showers min 3 star WELS rated.	Cost impact to be assessed – linked to 11, 12 & 13	Water – Essential criteria. Refer discussion
17	Waterwise garden and Waterwise controlled irrigation scheme		Water – Essential criteria require drought tolerant species, and where irrigation is required, that it is from a non-potable source. Refer discussion

EnviroDevelopment - Water

TARGET: Measures that would achieve at least a 20percent reduction in potable water use beyond regulatory measures and have no potable water irrigation requirements.

ESSENTIAL ACTIONS:

- Reduce overall water use by 20 percent beyond regulatory means –water efficiency mechanisms.
- Utilise alternative water sources - rainwater, stormwater, dual reticulation to meet irrigation demand for public open space and common areas of the project or use drought tolerant species which require no
- End user education

Discussion:

The target for the ED water Element is ‘to incorporate measure to achieve at least a 20 percent reduction in potable water use beyond regulatory measures and have no potable water irrigation requirements.

The standards ED provides for addressing this reduction are based on a current household potable water consumption of 559.2L/hh/day or 204kL/hh/year. A 20 percent improvement target therefore equals 447kL/hh/day or 163kl/hh/year (65kL/person/year).

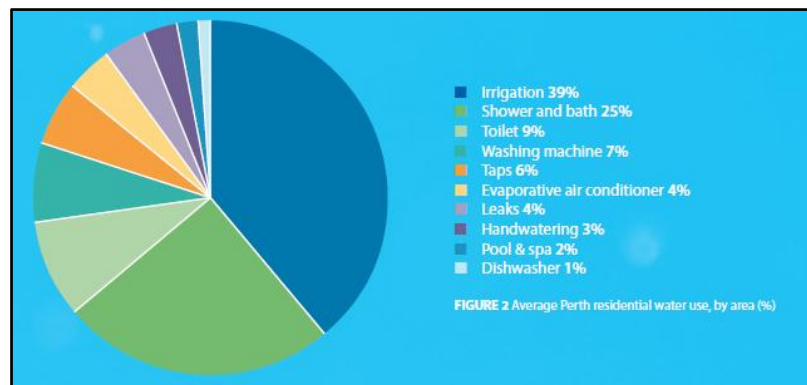
Note that these targets are more onerous than Water Corporation consumption figures, but generally consistent with the State Water Plan targets. The Perth Residential Water Use Study (Water Corporation 2008/09) shows the current average annual residential potable water use is 277kL/hh/year (106kL/person/year). A 20percent reduction below this average equates to 222kL/hh/year, or 85kL/person/year.

Number of people in the house	Water use per year (KL per household)
1	106
2	212
3	318
4	424
5	530
6	636

Average water use per household, Perth Residential Water Use Study 2008/09, Water Corporation

The State Water Plan has a target of 100kL/person/year, including not more than 40-60 kL/person/year scheme water (which is referred to in the LSP Section 13.0 LWMS), and a water reuse/recycling target of 20 percent for fit-for-purpose uses, i.e. irrigation, toilet flushing.

The Water Corporation research also shows that on average 39 percent is consumed for irrigation use, 16 percent for toilet flushing and laundry, and 32 percent for shower, taps, and dishwashing. The remaining 13 percent is consumed for air-conditioning, leaking and hand watering – refer table below.



Average water use by area, Perth Residential Water Use Study 2008/09, Water Corporation

The two key proposed initiatives that will be required to achieve the 20 percent reduction are either a 3rd pipe system for irrigation, or a rainwater tank for laundry and toilet flushing.

A 3rd pipe irrigation system has a focus on reducing garden irrigation use through the controlled supply of available groundwater. The system can supply the irrigation requirements for front and rear gardens. This will therefore achieve up to a 39 percent reduction in potable water use, based on Water Corporation figures.

The Stage 1 sub-division has a proposed 271 residential lots ranging in size of 380-530m² for standard residential lot to 225-290m² for narrow frontage cottage lots, which are approximately 30 percent of the total. These lot sizes indicate a significant portion of lots will have quite sizeable gardens with irrigation requirement. Based on these lots sizes and an average building footprint of approximately 60 percent of lot area, the garden area may vary from approximately 120m² - >150m².

There is also potential for the 3rd pipe system to be extended into the home for non-potable uses including toilet flushing and cold-water laundry use. This approach will require negotiations with the Department of Health to gain acceptance and approvals. It is also influenced by water quality, specifically iron content, which can affect plumbing systems and discolouration of fixtures. If approved, this will add an additional 16 percent reduction to the 39 percent gained from the garden irrigation offset, equalling a potential 45 percent reduction in potable water use, or 48/kL/person/year.

Cost estimates for installation of the 3rd pipe system are \$2,500 - \$3,000/lot: The figures, provided by Total Eden, are based on actual costs for full installation (including pipe work, bores, pumps, weather station, and connection and meters to lots) at SPG's developments at Brighton and Evermore Heights respectively. Total Eden advice that the cost difference between the two estates is due to the economies of scale – Evermore Heights is a 400 lot sub-division while Brighton has in excess of 1000lots. As Catalina will have a projected 2,200 lots, similar economies of scale will be available.

Rainwater in residential sub-division areas is mainly used for in-house use of toilet flushing and cold-water laundry use. There is also potential to use the water as a supplement for water heating.

Approximately 80 percent of Perth's average rainfall falls in winter months between May and September, thereby reducing the amount of water saving over a 12 month cycle. Based on the Water Corporate percentage of total water use, a plumbed rainwater tank will provide potable water offset of less than 10 percent.

Currently Perth based contractors are installing domestic rainwater harvesting systems for cold supply only in the range \$2,500 to \$5,000 for 2,500-3,000-litre systems with a typical cost of \$3,500. These costs are dependent on ease of connection and location within the lot.

Based on these cost estimates and the above water use percentages, the 3rd pipe system will achieve and exceed the ED target at a cheaper cost than a rainwater tank. Furthermore, the installation of 3rd pipe system will address SIP Initiative 13, which addresses future water policy changes to allow the reuse of treated wastewater through a centralized managed aquifer re-charge scheme.

SIP Initiative 16 refers to high efficiency fittings and fixtures. The BCA 5 Star Plus standards currently require WELS rated fixtures in the home. These are:

- All tap fittings (other than bath outlets and garden taps) minimum 4-star WELS rated
- All showerheads will be a minimum 3-star WELS rated
- All sanitary flushing systems will be a minimum dual-flush, 4-stars WELS rated.

There are opportunities to gain greater efficiencies through more efficient showerheads and toilets, which combined account for 34 percent of water consumption.

The ED Water category requires drought-resistant native landscaping to open space and street verges. This is not directly stated in the current initiatives, but is implied in SIP Initiatives 14 and 15. ED also strongly supports native gardens within lots, which is addressed in SIP Initiative 17.

ED has a requirement for education of occupants/users, and the monitoring of initiatives to verify targets.

The Education requirement is referenced in SIP Initiative # 20 and 21. This program will however need to be extended beyond waste reduction education to a more holistic Sustainability Living program.

Existing successful models for sustainable living include direct community engagement programs such as Living Smart Workshops, and behaviour change coaching support to address household living, energy, water, waste, gardens and healthy lifestyle, and include data collection and goal setting to achieve continuous improvement and verify targets.

The Behaviour Change Coaching programs, which are operated through a centralised tele-centre using trained behaviour change coaches, provide an efficient cost effective mechanism to address on-going 'end-user' education, including demand management, as well as verification of targets. The verification is a critical ED component to provide sufficient empirical data for annual re-certification.

These are discussed in more detail below under Residents and Occupants / Community.

Recommendations: (in addition to the supported initiatives listed above)

- Implement a 3rd pipe scheme for garden irrigation requirements
- Investigate opportunities to extend the 3rd pipe scheme for in-house toilet and laundry uses
- Promote high efficiency fittings and fixtures through design guidelines
- Ensure open space and street planting is predominantly local native and drought resistant
- Implement a Sustainable Living and Behaviour Change Coaching program to address end-user education, continuous improvement and verification of targets

WASTE MANAGEMENT			
Sustainability Initiatives Plan			Relationship to EnviroDevelopment
	Initiative	Recommended Action	
18	Construction management criteria will be written into all contracts to ensure resource efficiency, waste minimization, and reuse or recycling of excess materials	Supported – include in Construction management contracts for civil works and landscaping	Waste – Essential criteria. Requires achieving a 60 percent recycling rate
19	SPG to build upon existing relationships with building companies to ensure waste management opportunities are optimised	Supported – to be negotiated with builders	Waste – Essential criteria. Requires achieving a 60 percent recycling rate

EnviroDevelopment - WASTE
TARGET: Development that has implemented waste management procedures and practices which reduce the amount of waste to landfill and facilitates recycling. ESSENTIAL ACTIONS: Identify local recyclers, secondary product manufacturers and material streams available to the site + achieve the following requirements: - Pre-construction - Site waste management plan, reuse of existing materials, reuse or recycle demolition, land clearing, or civil works materials/products - Construction – Strategies for waste minimisation practices and reuse/recycling waste, waste management plans and policies, on-site recycling facility - Post-construction - Community education on reduce, reuse and recycle, on-site compost, reuse of construction materials by occupants

The essential requirement of the ED Waste Element is to identify local recyclers, secondary product manufacturers and material streams available to the site to be used in the preconstruction and construction phase.

Waste Management and recycling in the development sector is an area that is often cited as an important sustainability objective, but often fails to achieve meaningful results. While there are many points along the development cycle where failure can occur, the key issues result from not having appropriate expertise to develop and manage a detailed Waste Management Strategy (WMS). To adequately address ED Waste Element criteria requires the development of a detailed WMS to be implemented in the civil works and building construction phases of development. This is best achieved through the services of a Waste Management Specialist with expertise in the design of the program, which would occur in liaison with the civil engineer, landscape architects, civil works and landscape contractors and builders. The core features of the Waste Management Strategy would include:

- For pre-construction civil works:
 - o design of a site waste management plan addressing handling, storing and collection of waste and recyclables
 - o identification of the most suitable waste management skip/bin recycler
 - o communication and training requirements for site staff
 - o an audit estimate of potential land clearing or civil works materials to be recycled or reused on site, and stockpiles of topsoil to be used to best advantage
- For Building Construction:
 - o planning, establishment and operation of an on-site waste management and recycling, including through a central recycling centre on-site for reuse by residents and other builders
 - o liaison with waste management skip/bin recycler to provide records and data relating to material disposed of and/or recycled in a relevant format
 - o Liaison with suppliers to accept return of unused materials for re-use

ED also requires end-user and community education. This is discussed in more detail below under Residents and Occupants.

Recommendations:

- Develop a detailed Waste Management Strategy through the services of a Waste Management Specialist ensure on-site recycling activities through all three phases of development
- Engage a Waste Management Recycler, with proven recycling credentials, to undertake and on-site waste management and recycling, including through a central recycling centre on-site for reuse by residents and other builders
- Implement a Sustainable Living program to address end-user education – refer Residents and Occupants below

RESIDENTS AND OCCUPANTS			
Sustainability Initiatives Plan			Relationship to EnviroDevelopment
	Initiative	Recommended Action	
20	The City of Wanneroo operates verge side recycling programs that capture and recycle >90percent of household wastes.	Supported – to be linked to SPG Community Development Program	Waste – Essential criteria for post-construction community education and engagement Community: Ongoing community engagement and governance; and Community: Place Making Implemented through SPG's Community Development and Engagement Initiatives
21	Significant opportunities exist for residents and occupants to reduce their waste through a number of localized and lot based initiatives such as composting of food and green waste for re-use on private or community gardens	Supported – to be linked to SPG Community Development Program	
22	Establish community garden	Discuss with City of Wanneroo	
23	Provide fibre to the home (FttH)	Supported	Community: Transport – Work from Home criteria
24	Cede Housing (affordable built form product)	Supported – site to be identified in first stage	Community: Place Making criteria for 10 percent affordable house and land product interspersed through the development area
TRANSPORT			
Sustainability Initiatives Plan			Relationship to EnviroDevelopment
	Initiative	Recommended Action	
25	Examine the potential for light rail	Not supported – not further action	NA
26	Examine potential for community bus service	Cost impact to be assessed	Community: Transport – included as an optional criteria Not considered essential due to the proximity of Catalina to existing transit centres and bus routes with 1km of the development area
27	Plan for early provision of PTA services	Commence discussion with PTA	Community: Transport. Not considered essential due to the proximity of Catalina to existing transit centres and bus routes with 1kn of the development area

EnviroDevelopment - Community

TARGET: Development that encourages social capital, community spirit, sustainable local facilities, reduced use of private motor vehicles, a sense of safety/security and accessible and flexible design that welcomes a diversity of people and adapts to their changing needs.

ESSENTIAL ACTIONS: Project is driven by a clear vision, with defined environmental, economic and social sustainability goals including measurable performance targets + achieve SIX of the following Eight options:

1. Community Consultation, Planning and Development
2. Ongoing Community Engagement and Governance
3. Transport
4. Place Making
5. Community Prosperity
6. Local Facilities
7. Safe, Accessible Communities
8. Indoor Environment Quality

The objective of the ED Community Element is to ensure strong, vibrant, prosperous, healthy and sustainable communities. Addressing these criteria requires appropriate planning design responses, community engagement and community development (CD), and built form design criteria.

The LSP includes planning design principles and describes various initiatives that address many of the Community Element criteria. These include initiatives to address Transport, Place Making, Community Prosperity, Local Facilities and Safe, Accessible Communities.

SPG's CD and Engagement Program will also adequately address the criteria under Community Consultation, Planning and Development; and Ongoing Community Engagement and Governance.

Listed below is a summary of the key aspects of the Community Element that have and/or will need to be addressed, and a rating of the likelihood to be achieved. Note ED only requires achievement of six of the following eight options.

ED Community Element	Status relevant to ED Community Criteria	Ability to be Achieved
Project Vision aligned to sustainability outcomes	Already addressed through TPRC vision and objectives. Will be enhanced and verified through ED certification	High
Community Consultation, Planning and Development	Already addressed through objectives of the TPRC and embedded through LSP processes Will require additional engagement to ensure community feedback has been considered and incorporated, specifically with regard to recognition of indigenous and post-European cultural heritage e.g. community art	High
Ongoing Community Engagement and Governance	To be addressed through SPG's CD Program. Key activities may include: - On-site CD Officer - Community grants - Engagement with and sponsorship of local community and environment groups - Community education - specifically related to sustainable living	High
Transport	Addressed in the LSP Need to ensure inclusion of pedestrian and cycle options such as dedicated and connected paths, secure bicycle park facilities, and public transport options	High
Place Making	Mostly addressed in the LSP through sub-division design, provision of community facilities, local shops, recreation and diversity of housing types and densities Need to ensure provision of affordable housing product	High

	to 10 percent of lots, and recognition and incorporate local heritage, e.g. through community art	
Community Prosperity	Addressed in the LSP Need to incorporate a local community economic employment plan addressing socio-economic profiles, activities within the development e.g. retail, industrial, commercial, community based economic goals and priorities, employment targets and the job balance ratio	High
Local Facilities	Addressed in the LSP	High
Safe and Accessible Buildings	Some criteria are already addressed in the LSP Additional criteria will need to be addressed though built form design criteria	Low - Medium
Indoor Environment Quality	Some criteria are already addressed in the SIP Initiatives 6 and 7 Additional criteria will need to be addressed though built form design criteria to achieve the IEQ criteria	Medium

Discussion:

Two key aspects of the ED Standards, which are related to all Elements, are the requirement for education for sustainable living and behaviour change programs, and monitoring to verify achievement of targets, specifically for energy, water and waste.

In effect this would constitute two distinct yet inter-related stages:

- Stage1: Sustainable Living Educational Workshops, conducted periodically (e.g. 1, 2 or 3 annually depending on staged releases and land sales) as part of the CD activities
- Stage 2: On-going Behaviour Change Coaching: direct phone coaching and support conducted over a 2 - 3 year period for interested families, which incorporates data collection, monitoring and verification

A Sustainable Living Workshops program can be developed as a key feature of the CD Program. SPG have successfully trialled and run these program and activities in other developments. This includes the facilitation of 'Living Smart' events at Evermore Heights. Living Smart, an award winning sustainable living program, focuses on behaviour change education and includes specific goals setting to achieve sustained change and monitor progress. A typical program runs for 6 – 7 weeks and includes key focus areas, as listed below:

- Week 1: Thinking Smart, Being Smart
- Week 2: Power Smart
- Week 3: Waste Smart
- Week 4: Water and Gardening
- Week 5: Healthy Homes Healthy You
- Week 6: Move Smart and Building Community
- Week 7: Excursion

The Behaviour Change Coaching Program component is a critical step in ensuring sustained reductions in energy and water consumption. Typically these programs are operated through a centralised tele-centre using trained behaviour change coaches, thereby providing an efficient cost

effective mechanism to address on-going 'end-user' education and behaviour change. The added benefit of the Behaviour Change coaching is that they provide ready access to energy and water consumption figures, which form the baseline data to monitor usage patterns and verify achievement of targets. The verification component is critical to provide sufficient data for annual re-certification. ED has identified the verification of targets as an essential component to be able to qualify for re-certification on an annual basis.

While a costed model will need to be developed, the combined 2 stage approach will simultaneously address key ED criteria.

Recommendations / Required Actions: (in addition to the supported initiatives listed in the SIP)

- Promote the sustainability vision and apply community development and engagement initiatives to create a strong vibrant and sustainable community
- Ensure community feedback has been considered and incorporated
- Undertake and maintain on-going community engagement, with a focus on sustainable living:
- Develop a community education for sustainable living program – with a focus on direct community engagement, behaviours change and demand management, data collection and goals setting to achieve continuous improvement and verify targets
- Ensure inclusion of pedestrian and cycle options such as dedicated and connected paths, secure bicycle park facilities, and public transport options
- Ensure provision of affordable housing product to 10 percent of lots/dwellings
- Include IEQ criteria in built form design guidelines

EnviroDevelopment - Ecosystem

TARGET: Development that aims to protect and enhance existing native ecosystems and encourages natural systems and native biodiversity and rehabilitates degraded sites.

ESSENTIAL ACTIONS: Thorough site analysis completed to ascertain key features of relevance, including hydrological features, flora, fauna habitats, and landforms + achieve ALL the following requirements:

- Aquatic Ecosystems - Water Sensitive Urban Design (WSUD) principles
- Landform - Retain landform and/or locate on and remediate degraded and contaminated site
- Flora – Site restoration and enhancement and encourage native vegetation communities, and open space contribution
- Fauna – Develop ecological corridors and facilitate native fauna habitation.

Discussion

The criteria of the Ecosystem Element have largely been addressed through and embedded in LSP and therefore has a high likelihood of achieving certification.

The specific SIP initiatives relating to Ecosystem are SIP Initiative 14 and 15 which will largely address the Aquatic Ecosystem / WSUD requirements.

Listed below is a summary of the key aspects of the Ecosystem Element that have and will need to be addressed, and a rating of the likelihood to be achieved. In addition to the essential action, all four categories are required to be achieved.

ED Ecosystem Element	Status relevant to ED Ecosystem Criteria	Ability to be Achieved
Essential Actions: Thorough site and environmental analysis	Already addressed through the LSP approval process (refer LSP Part Two – Section 13 and 14)	High
Aquatic Ecosystems: including: - Protect natural surface and groundwater - Water Sensitive Urban Design (WSUD) principles	Already addressed through the LSP approval process, including the LWMS (refer LSP Part Two – Section 13), and referred to in SIP Initiatives 14 and 15	High
Land Form: including - Retain local and adjacent natural landform - Reduction in cut and fill - Construction to minimise disruption to landform and drainage - Street layout designed and constructed to fit with topography	Already addressed through embedded in LSP approval process (refer LSP Part Two – Section 13 and 14) Will need to be confirmed through engineering drawings and specifications	High
Flora - Designate and protect sensitive conservation areas - >90 percent of all plants are locally native - maintenance of native flora and habitat - Retention of the existing native trees and locally native plants - Construction management plan with - Contribute green space (POS) in excess of the requirements	Already addressed through embedded in LSP approval process (refer LSP Part Two – Section 13 and 14) Will need to be confirmed through landscape design and engineering drawings	High
Fauna - Designate and protect sensitive conservation areas - >90percent of all plants are locally native - Maintenance of native flora and habitat - Retention of the existing native trees and locally native plants - Construction management plan with - Retain, enhance and link	Already addressed through embedded in LSP approval process (refer LSP Part Two – Section 13 and 14) Will need to be confirmed through landscape design and engineering drawings	High

native vegetation areas of ecological importance		
- Contribute green space (POS) in excess of the requirements		

Recommendations / Actions:

There are no specific recommendations for Ecosystem. Based on the above analysis, Catalina will meet the criteria to gain ED Ecosystem certification.

- The key action is to undertake a detailed assessment of all approvals (LSP, LWMS), design approaches and initiatives against the ED Ecosystems standards to confirm compliance and proceed toward certification

DESIGN, & ACCREDITATION			
Sustainability Initiatives Plan			Relationship to EnviroDevelopment
	Initiative	Recommended Action	
1.	Apply relevant EnviroDevelopment standards for Tamala Park	Supported – need to determine which Elements for certification	This will be addressed through the scope of this report
2.	Adopt the City of Wanneroo Smart Growth policy and tool, to satisfy all current planning and policy requirements.	Supported – planning consultant to be briefed	Relevant to all ED Elements Addressing the ED Elements will overwhelmingly satisfy the objectives of Smart Growth, which have also been addressed through the LSP
3.	Identify areas within development that would benefit from Site Responsive Housing design	Cost impact to be assessed for land area west of Marmion Drive	Ecosystem: Landform criteria

Discussion:

No specific discussion is required as the process of certification is addressed though the scope of this consultancy. The outcome is benchmarked and effectively measured by addressing the selected ED Elements and achieving certification.

Recommendation:

Progress fulfilling the requirements for ED certification in Energy, Water, Waste, Community and Ecosystem

Financial Incentives

The current project cash flow budget has allowed for a \$5,000 allowance for the implementation of selected environmental sustainability initiatives which will be required to support achieving ED criteria, specifically for energy and water targets.

All proposed initiatives that require a financial incentive or rebate will need to be costed to fit within the budgeted allowance of \$5,000 per lot.

Based on the discussion and recommendations included in the Analysis Review and Recommendations section, the following is recommended:

Category / Element	Objective	Initiative	Incentive amount	Rebate Received
Water	20 percent reduction in potable water consumption	Groundwater fed 3 rd pipe system	\$3,000 per lot	NA – installed prior to purchase
Energy	20 percent reduction in GHG emissions	1.5kW PV system	\$3,000 on 50 percent of lots	Upon completion of the home
	Peak Load reduction / Behaviour Change Coaching	Load Control Devices / Behaviour Change Demand Management Coaching	\$1,000 on 50 percent of lots or \$2,000 on 25 percent of lots	Upon occupancy of the home

Potable Water Reduction:

To address the Water target of a 20 percent reduction in potable water, the groundwater fed 3rd pipe system it is recommended, as this system can achieve a 39 percent reduction (and a potential 45 percent reduction) below current averages.

Based on data from similar systems, an allowance of \$3,000 per lot will be sufficient to cover cost of installation to all lots in the development area.

GHG Reduction:

To address the Energy target of a 20 percent reduction in GHG emission, a 1.5kW PV system is recommended. Based on the analysis in the Energy section, if 50 percent of lots/dwellings were to install a 1.5kW PV system, the 20 percent target reduction in GHG emission can be achieved.

The logic for nominating 50 percent of lots is that this can allow a larger financial incentive - e.g. up to \$3,000 - than if 100 percent of lots were targeted which would only allow an incentive of \$1,500. The larger incentive will be critical in attaching a greater uptake of PV systems which is critical to achieve the overall GHG reduction.

Peak Load Management and Behaviour Change Demand Management Coaching:

Direct Load Control Devices installed on selected appliances such as air-conditioners have been identified as providing a significant peak load reduction, a key ED – Energy criteria.

Similarly Behaviour Change Coaching is a key initiative for supporting sustained behaviour change as well as providing a simultaneous means of data collection to verify energy and water usage pattern in the home.

An incentive of \$1,000 on 50 percent of lots/dwellings (or \$2,000 on 25 percent of lots/dwellings) for the installation of load control devices as an enticement for attaching a sufficient number of new occupants to a Behaviour Change Coaching program is recommended.

As stated above, the installation of direct load control devices will need to be negotiated with Western Power; however the recommended approach provides a strong case to this agency, the State Government, as well as the member councils of the TPRC to support an innovation approach to energy and GHG reduction.

1 December 2011

Mr Tony Arias
Chief Executive Officer
Tamala Park Regional Council
Room 3 Scarborough Civic Centre
173 Gildercliffe Street
SCARBOROUGH WA 6019

Dear Tony

Catalina – Sustainability Initiatives and Sales Incentives

The Satterley Property Group has reviewed the resolution made by the Management Committee 24 November 2011 to recommend to Council approval of the following sustainability initiatives and building incentives:

- \$3,500 per lot - 3rd pipe system.
- \$4,500 per lot - Waterwise landscape package to front garden.
- \$3,500 per lot - Fencing to rear and side boundary in accordance with Design Guidelines.
- \$2,000 per lot - Solar Panel rebate.
- \$1,000 per lot - Fibre Optic service.
- \$2,000 per lot - Waste Recovery arrangement.

We are of the opinion that whilst the solar panel and waste recovery items may not directly result in increased sales they do compliment broader sustainability outcomes and can be used positively in marketing material for promotion of the estate and future award submissions.

These cost items will be adopted for the December review of the cash flow which will be reported to TPRC.

Yours faithfully,



Grant Singleton
Project Manager

15 November 2011

Mr Tony Arias
Chief Executive Officer
Tamala Park Regional Council
Room 3 Scarborough Civic Centre
173 Gildercliffe Street
SCARBOROUGH WA 6019

Dear Tony

Catalina – Sustainability Initiatives Plan

Mr David Beyer of Active Sustainability has completed his assessment of the sustainability initiatives for Catalina and his report and executive summary are attached for presentation to the Tamala Park Regional Council.

The Sustainability Initiatives Plan is framed on the assumption that the TPRC wish to achieve peer recognition for implementing sustainability initiatives. To achieve this peer recognition Mr Beyer is recommending aligning the sustainability initiatives with EnviroDevelopment (ED). The Urban Development Institute of Australia is promoting ED as the best industry model for measuring a projects sustainability credentials.

According to ED a project's sustainability credentials are measured against six elements, *Energy, Water, Waste, Community, Ecosystem and Materials*. Mr Beyer's report concludes that Catalina is well placed to achieve four elements, *Energy, Water, Community and Ecosystem* and the *Waste* element may also be achieved if some proposed initiatives are strengthened.

The current budget allowance within the approved cashflow for sustainability initiatives is \$5,000 per lot. The Satterley Property Group believes that this is best directed toward sustainability in Water. Our experience with targeting Energy initiatives (Photo Voltaic Cells) is that these do not generate any additional sales or increase in revenue as the consumer does not see them as value offer by a developer. A water initiative such as a 3rd pipe scheme is more desirable by the consumer and has the added benefit of enhancing an estates overall presentation by providing a secure non potable water supply which can be complemented by waterwise landscaping to both public parks and residents front gardens.

A further consideration for TPRC is that pursuing ED certification requires annual monitoring, reporting and assessment in order to maintain certification status. This has not been costed in the cashflow and is anticipated that it could add an additional \$50,000 per year to the consultant budget.

Appendix 9.6 - Letter from SPG

The current uncertainty of the residential market suggests a conservative approach be taken. The TPRC may be best served by implementing a selected number of initiatives which may also achieve ED Certification and then build on this in subsequent years. Not every stage of Catalina would need to achieve the maximum certification possible rather each successive stage could build on or specialize in a particular sustainable initiative.

Our recommendation would therefore be that over FYE 2012 and 2013 the Catalina project:

- Establish Waterwise Gardens and 3rd Pipe System
- Establish program of Community Development
- Document existing Ecosystem initiatives

This would enable the TPRC to pursue certification in three of the EnviroDevelopment elements *Water, Community and Ecosystem*.

In addition we can investigate and negotiate with builders to achieve 60% recycling which if positively received by the building industry could add a fourth element of *Waste* management.

The above recommended sustainability initiatives can be funded from the current approved cashflow. Funds that can be directed to sustainability initiatives and currently available within the approved cashflow are:

- \$5,000 per lot allowance in Lot Production budget for sustainability initiatives.
- \$5,000 per lot allowance in Direct Selling costs for waterwise landscape package
- \$2,453 per lot allowance in Lot Production budget for Fibre Optic service [*Community*]
- \$1,200 per lot allowance for Community Development.

The report prepared by Mr David Beyer of Active Sustainability is presented for consideration by the Tamala Park Regional Council.

The Satterley Property Group has reviewed the report and recommends that for the Catalina project that the TPRC approve that over the FYE 2012 and 2013 that SPG proceed to:

1. Establish Waterwise Gardens and a 3rd Pipe non potable water supply system
2. Establish the program of Community Development
3. Document existing Ecosystem initiatives

And seek EnviroDevelopment certification in the elements of *Water, Community and Ecosystem*

Yours faithfully



Grant Singleton
Senior Project Manager