



UNIVERSAL PARAGON CORPORATION

150 Executive Park Blvd., Suite 4000
San Francisco, CA 94134

July 11, 2017

Lori Liu, Mayor and Members of the City Council
City of Brisbane, City Hall
50 Park Place
Brisbane, CA 94005

Re: Bioregional analysis of development scenarios for the Baylands

Dear Mayor Liu and Councilmembers:

Enclosed, please find the final report from Bioregional analyzing options for renewal of the Brisbane Baylands site through the lens of the organization's One Planet Living sustainability model.

Founded in 1994, Bioregional is one of the world's most respected environmental charities, which aims to invent and implement practical solutions to sustainability. Bioregional's One Planet Living model, developed for the World Wildlife Fund, is a blueprint for creating sustainable communities used successfully on numerous projects in the United States, United Kingdom, Australia and in several African nations.

The City of Brisbane's Sustainability Framework for the Baylands is meant to inform the negotiation of binding understandings between the City and the Developer in a Development Agreement. The Framework is organized around the ten One Planet Living principles developed by Bioregional. The City chose Bioregional's model because of its "worldwide acclaim for their ingenuity in design, thoughtfulness towards local issues, and understanding the importance of harmony between development and nature." UPC—with full knowledge that Brisbane set the One Planet Living principles as the benchmark for its Sustainability Framework—commissioned a report to gain comprehensive understanding of what would be required for the project to meet the One Planet Living criteria.

Bioregional compared the various development options considered in the Baylands EIR and, in areas where these options fell short of One Planet Living sustainability goals, suggested modifications to Universal Paragon and the City Council.

Bioregional used its One Planet Living Model to analyze each development option across the following local, regional and planetary sustainability criteria:

Local	Regional	Planetary
Remediation of contamination land	Housing shortage and housing affordability	Habitat and biodiversity loss
Air quality protection	Traffic and congestion	Greenhouse gas emissions
Reducing water use, protecting water courses	Poverty / cost of living	Global Equity (linked to consumption)
Minimising traffic and congestion	Air quality and impact on green-belt	Chemical, novel product use (e.g. fertilisers)
Retaining scenic views	Economic impact of lack of affordable housing	
Preservation and creation of habitat	Protection of water	

Bioregional then considered the following three development options analyzed by the EIR:

1. **Developer Sponsored Plan (DSP)** — Universal Paragon Corporation’s proposal for 12.1 million square feet of development, including 16,000 jobs and 4,500 homes near transit
2. **Community Preferred Plan (CPP)** — Alternative 8.3 million square foot development proposal from the Brisbane Planning Department, including 15,550 jobs and no housing
3. **Renewable Energy Alternative (REA)** — Alternative 2 million square foot alternative energy generation proposal from the Committee for Renewable Energy in the Baylands, a local community group, that includes no housing

Additionally, Bioregional proposed three development options that, according to the group’s One Planet Living model, would clean-up and redevelop the Baylands in a more sustainable fashion:

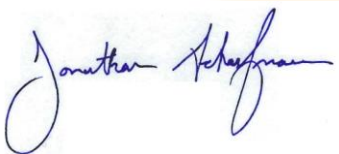
1. **Resi-Mid** — Bioregional alternative 12.1 million square foot development option, including 11,500 jobs and 6,800 homes near transit
2. **Resi-Max** — Bioregional alternative 12.1 million square foot development option, including 7,000 jobs and 9,150 homes near transit
3. **One Planet Community (OPC)** — Bioregional’s optimal One Planet Living development option, including 13,000 jobs and 7,000 homes near transit

Bioregional concluded that no one proposal, including the development options it proposed, perfectly aligns with Brisbane community needs. Bioregional determined that, while the Community Preferred Plan and the Renewable Energy Alternative may meet some of the local needs, they also have their own negative impacts, such as increasing congestion and air pollution or not paying for the clean-up of the contaminated land. **Bioregional concluded that an option that effectively maximizes housing will go the furthest toward reaching local, regional and even planetary needs.**

From a planetary perspective, the development option that brings the largest carbon saving will have the biggest overall environmental benefit, and these are the development options that include a higher level of housing units. Increasing residential development has the potential to reduce traffic congestion in the area and improve air quality, and therefore deliver local benefits. It’s worth noting that under the One Planet Community scenario residents drove less, reduced their carbon emissions by almost 50 percent and saved \$250 per week on transportation costs.

Finally, Bioregional suggests that Universal Paragon and the City of Brisbane consider the recommendations of the report and work together to find the best solution to meet the needs of Brisbane, the region and the planet. On behalf of Universal Paragon, we would invite that opportunity.

Sincerely,



Jonathan Scharfman
General Manager/Land Development Director
Universal Paragon Corporation

cc: Clay Holstine

Baylands One Planet Review - summary report

June 2017

Ben Gill MA (Cantab), Lewis Knight MSc,
Nick James MSc and Pooran Desai MA (Oxon) OBE.



Bioregional



BedZED is the UK's first large-scale, mixed use sustainable community with 100 homes, office space, a college and community facilities. Completed in 2002, this pioneering eco-village in south London suburbia remains an inspiration for sustainable neighbourhoods and our One Planet Living Communities across the world. It is also Bioregional's headquarters. The project was initiated by Bioregional, developed by The Peabody Trust in partnership with Bioregional and designed with architects, ZEDFactory (also based in BedZED) and Arup engineers.

Foreword by Pooran Desai, International Director for One Planet Communities



Development is often – even usually – difficult and controversial. Change brings challenges. The Bay Area is the world’s most important area economically and in that context, the residents and staff of City of Brisbane are confronted with many opportunities and pressures.

My team and I have analysed at the Baylands site through the lenses of local, regional and planetary needs and wants. It is clear that the best outcome overall - one which integrates local, regional and planetary needs - is the development maximising the number of homes incorporating high levels of affordable housing, supported by mix of community, commercial and retail space. It needs to anticipate social and environmental needs and pioneer ways in which the current and future residents of City of Brisbane can lead happy, healthy lives within the environmental limits of our planet.

In the shadow of San Francisco, the Baylands site is of global significance. The City of Brisbane carries the power and the responsibility that go with it. We sincerely hope that the developer, the residents and staff of Brisbane can work in true partnership and spirit of generosity, to build an exemplar for the future – a global beacon. It will take enormous courage, but the world needs it.

Main Conclusions

In total five scenarios were assessed, and this process was used to develop a sixth enhanced proposal. Three scenarios were taken from the Environmental Impact Report; the Developer Sponsored Plan (DSP), the Community Preferred Plan (CPP) and the Renewable Energy Alternative (REA). Based on the DSP two alternatives with higher levels of residential development (Resi-Mid and Resi-Max) were also developed.

The assessment showed that no option met all the local needs, and that including housing could have planetary, regional and local benefits. We believe the opportunity exists to further optimise the benefits through the development of the One Planet Community (OPC) option.

	The Scenario is well aligned with the desired outcomes, meeting most of them
	The Scenario meets some of the desired outcomes
	The Scenario does not meet a significant number of the desired outcomes

	DSP	CPP	REA	Resi-Mid	RESI - Max	OPC
Local						
Regional						
Planetary						

1. Introduction

Bioregional is a UK based not-for-profit, established in 1994 with an independent board of trustees. Our mission is to support models of sustainable development in order to protect the natural world and to promote education in sustainable living. We have worked with communities and developers around the world using our One Planet Living framework.

Bioregional were commissioned by Universal Paragon Corporation (UPC) to undertake a review of the options for the Baylands development. The site’s proposed development is controversial. It is currently a contaminated landfill site, within a small city, and its redevelopment has the potential to substantially increase the local population. The area has a large housing demand, affordability challenges and there is increasing pressure on the existing transport network. Aiming to be as objective as possible, and recognising that there is no single ‘right answer’, this report summarises our response to the question: what is the best way to develop the site?

Bioregional has considered the impacts and benefits of the Baylands development through three lenses: local, regional and planetary. We developed a range of development scenarios to compare against these desired outcomes, as well as benchmarking the development against the One Planet Principles and associated Goals and Guidance. This analysis was used to propose an alternative development scenario that has the best possible outcome from local, regional and planetary perspectives, in order to bring increased value to the local community, city and the developer.

2. One Planet Living

We only have one Planet Earth, but as a global society we’re living as if we have several planets and consuming in ways which cannot be sustained. That means that a lot of things must change. But we also know that if we work together we can enjoy just as much comfort, more security and better health, while living lives that are enriching, fulfilling and sustainable.

One Planet Living sets out to make this transition. It is a framework and an initiative which grew out of the experience of developing the pioneering BedZED eco-village in south London, UK in the early 2000s. Today there are One Planet Communities (OPC) and Destinations in Europe, North America, Africa and Australia.

It is a simple framework which enables everyone – from the general public to professionals – to collaborate on a sustainability strategy drawing on everyone’s insights, skills and experience. It is based on ten guiding principles of sustainability which we can use to create holistic, joined-up solutions.

	Health and happiness	Encouraging active, social, meaningful lives to promote good health and wellbeing
	Equity and local economy	Creating safe, equitable places to live and work which support local prosperity and international fair trade
	Culture and community	Nurturing local identity and heritage, empowering communities and promoting a culture of sustainable living
	Land and nature	Protecting and restoring land for the benefit of people and wildlife
	Sustainable water	Using water efficiently, protecting local water resources and reducing flooding and drought
	Local and sustainable food	Promoting sustainable humane farming and healthy diets high in local, seasonal organic food and vegetable protein
	Travel and transport	Reducing the need to travel, encouraging walking, cycling and low carbon transport
	Materials and products	Using materials from sustainable sources and promoting products which help people reduce consumption.
	Zero waste	Reducing consumption, re-using and recycling to achieve zero waste and zero pollution
	Zero carbon energy	Making buildings and manufacturing energy efficient and supplying all energy with renewables

3. Needs analysis

A web-based review was conducted to search and understand public comments made and documented on the Brisbane planning website. Additionally, a review of the City of Brisbane Baylands survey (2015), and the Sustainability Framework for the Baylands (2015) was also undertaken. This analysis identified six “local needs” priority areas:



Regional needs were similarly assessed. While tens of documents were reviewed, the following were identified as the key documents:

- Plan Bay Area 2040 – Draft Plan, May 2017
- Bay Area Council – Economic profile of Bay Area - <http://www.bayareaeconomy.org/files/pdf/BayAreaEconomicProfile2012Web.pdf>
- 2017 Bay Area Council Poll - <http://www.bayareacouncil.org/2017-bac-poll/>
- LAO report: <http://www.lao.ca.gov/reports/2015/finance/housing-costs/housing-costs.pdf>
- BAC report - slowing job growth report: <http://www.bayareaeconomy.org/bay-area-job-watch-15/>

Planetary needs were identified from the science of Planetary Boundaries and One Planet Living requirements. The key local regional and planetary needs are shown in the table below in. While ranking the needs is subjective the order in the table aims to reflect their relative importance based on the research undertaken.

Local	Regional	Planetary
Remediation of contaminated land	Housing shortage and housing affordability	Habitat and biodiversity loss
Air quality protection	Traffic and congestion	Greenhouse gas emissions
Reducing water use, protecting water courses	Poverty / cost of living	Global Equity (linked to consumption)
Minimising traffic and congestion	Air quality and impact on green-belt	Chemical, novel product use (e.g. fertilisers)
Retaining scenic views	Economic impact of lack of affordable housing	
Preservation and creation of habitat	Protection of water	

The aggregated list of needs was compared to the One Planet Principles in the table below, those highlighted in green are the key outcomes where local, regional and planetary needs are in full alignment.

This analysis shows that while there are some areas of misalignment between the different identified needs at the local, regional and planetary level, there is also considerable alignment. Local emissions and air quality, water conservation, traffic impacts and contamination and habitat protection are themes that cut across all three levels. Improvements and enhancements achieved in the context of these themes can be considered as desired outcomes. Therefore, by identifying and implementing strategies that successfully address these cross-cutting themes in a coherent fashion an optimised development proposal can be delivered.



One Brighton (Brighton, UK)

A One Planet Community comprising 172 apartments, office and community space. It's the largest car free development in the UK



WGV, Fremantle (Western Australia, Aus)

This One Planet Community has a strong focus on providing community spaces and facilities, as well as affordable housing

One Planet Principle	Local need (Brisbane)	Regional needs (Bay area)	Planetary needs
Health and Happiness	<ul style="list-style-type: none"> Improving and ensuring high levels of air quality Preservation of local views Proximity to schooling Improving visual appeal of the area as whole Enhancing recreational uses Protection of views of San Bruno Mountain Construction impact – noise and pollution 	<ul style="list-style-type: none"> Improving air quality Food Security 	<ul style="list-style-type: none"> Air quality and health Food Security
Equity and Local Economy	<ul style="list-style-type: none"> Affordable housing for future generations Housing that working families can afford Generate revenue to pay for needed infrastructure Need for commercial and retail space Mix of uses to promote economic sustainability Connecting Baylands with Brisbane 	<ul style="list-style-type: none"> Housing affordability Housing shortages Reduce levels of poverty Increase standard of living Housing for young start-ups and entrepreneurs 	<ul style="list-style-type: none"> Social Equity
Culture and Community	<ul style="list-style-type: none"> Proactive engagement with developers of Baylands Retain the 'feel', 'style' and 'culture' of Brisbane 		<ul style="list-style-type: none"> Community facilities provision
Land and Nature	<ul style="list-style-type: none"> Improving and enhancing open spaces and habitat Preserving open spaces and wetlands Remediation of contaminated land Light Pollution from increased street lighting 	<ul style="list-style-type: none"> Biosphere integrity Land use change Infill development to preserve open space and Greenbelt 	<ul style="list-style-type: none"> Reduce species extinction rates Decrease land use changes Reduce ocean acidification Reduction in Ozone depletion
Sustainable Water	<ul style="list-style-type: none"> Utilising recycled and reclaimed water Protect local water quality 	<ul style="list-style-type: none"> Reduction in water use Basin water use and quality 	<ul style="list-style-type: none"> Sustainable water use
Local and Sustainable Food	<ul style="list-style-type: none"> Promote sustainable diets based on local produce 	<ul style="list-style-type: none"> Promote the local economy 	<ul style="list-style-type: none"> Sustainable diets Increase food security
		<ul style="list-style-type: none"> Phosphate runoff from erodible soils 	<ul style="list-style-type: none"> Reduce phosphate runoff to ocean Reduce Nitrate runoff
Travel and Transport	<ul style="list-style-type: none"> Minimising traffic impacts from any proposed site Traffic and congestion issues New cycle tracks/ paths in any new development Building of a new transit hub for trains/buses Ability of public transit to cope with demand 	<ul style="list-style-type: none"> Reduction in traffic/congestion Inspire alternative transport 	<ul style="list-style-type: none"> Decrease in global carbon and greenhouse gas emissions
Products and Materials	<ul style="list-style-type: none"> Construction and property maintenance to use low impact materials 		<ul style="list-style-type: none"> Novel products Sustainable Consumption Low embodied energy
Zero Waste	<ul style="list-style-type: none"> Minimise waste generation from any proposed site 		<ul style="list-style-type: none"> Effective waste management
Zero Carbon Energy	<ul style="list-style-type: none"> Generation of renewable energy on site Promotion of clean energy for local area Greenhouse Gas emissions reductions Harness renewable energy for city of Brisbane 	<ul style="list-style-type: none"> Environmental friendly developments 	<ul style="list-style-type: none"> Decrease in global greenhouse gas emissions

4. Scenario assessment

The Baylands site is a unique opportunity, offering a broad range of development scenarios. In order to refine the range of options, to underpin a focused and useful assessment, the following five scenarios were selected:




1. The Developer Sponsored Proposal (DSP) - as assessed in the Environmental Impact Report (EIR) of June 2013:
2. The Community Preferred Proposal (CPP) - as also assessed in the EIR
3. Use the Renewable Energy Alternative (REA) - as proposed by [CREBL](#). Although this scenario is not comprehensively reviewed in the EIR it is the basis of the recommendation made by the Planning Commission dated 29th September 2016
4. Resi-Mid - Create a separate residentially-led development, based on the total floor area in the DSP that is in line with the jobs to dwelling ratios proposed in Plan Bay Area 2040 (Resi-Mid)
5. Resi-Max – Adjust the Resi-Mid scenario to create a residentially led development with a lower job to dwelling ratio – that is in line with successful inner-city residentially led redevelopments (Resi-Max)






























































































































The scenarios were based on information provided in the EIR and the Specific Plan, the key characteristics are shown in the table below:

Characteristic	DSP	CPP	REA	Resi-Mid	Resi-Max	OPC
Built area (mi sq. ft.)	12.1	8.3	2	12.1	12.1	13.2
Jobs	16000	15500	3200	11500	7000	13000
Homes (Jobs/home ratio)	4500 (3.5)	0	0	6800 (1.7)	9150 (0.75)	7000 (1.7)
Water demand in EIR, or estimate from EIR data	1.55	1.2	0.3	1.6	1.55	0.65
Parking spaces estimated from Specific Plan	22,500	20,000	3,000	20,000	16,500	< 10,000, Target 5,000
Renewable energy - % of demand (total GWh)	58% (42)	70% (48)	>100% (44)	60% (42)	60% (42)	100%

Comparison of the key desired outcomes against the proposed scenarios, is shown in the table below and reveals:

- No scenario(s) clearly stand out – all have strengths and weaknesses
- Although the REA (scenario #3) has the fewest local impacts, it fails to meet some key requirements – such as funding site remediation or improving transport facilities. It also obviously provides no housing.
- While there is a local desire not to have high levels of residential accommodation, an increased quantum is likely to reduce the negative impacts on air quality and congestion by allowing people to live closer to their place of work. Therefore, this has the potential to be a more desirable option even at the local level.

	The Scenario is likely to have a positive impact on the specified desired outcome
	The Scenario is like to have a neutral impact on the outcome, or more information is required to be definitive
	The Scenario is likely to have a negative impact on the desired outcome

Principle		DSP	CPP	REA	Resi-Mid	Resi-Max
Health and Happiness	Air quality					
	Contamination					
	Recreation					
Equity and Local Economy	Revenue for clean up					
	Job creation					
	Housing affordability					
	Equity					
Culture and Community	Retaining the feel of Brisbane					
	Community facilities					
Land and Nature	Wildlife and habitats					
	Light pollution					
	Off-site impact					
Sustainable Water	Protect quality					
	Reduce demand					
Local and Sustainable Food	Sustainable diets					
	Sustainable agriculture					
Travel and Transport	Congestion					
	Public transport capacity					
	Emissions					
	Facility provision					
Products and Materials	Sustainable consumption					
	Embodied energy					
Zero Waste	Waste minimisation					
Zero Carbon Energy	100% renewable energy					
	Renewable energy on-site					

5. One Planet Gap Analysis

A more detailed gap analysis was conducted of the DSP (scenario #1). This compared the proposals against the goals set out in the One Planet Communities [Goals and Guidance](#) document to identify where the current proposals are well placed to meet the goals of One Planet Living, and where there is likely to be gap. As the developer is continuing to develop the proposals, so this should be viewed as a snapshot in time.

	The current proposals are will aligned with One Planet Goals
	The current proposals are somewhat aligned with the One Planet Goals
	The current proposals are not well aligned with One Planet Goals as the proposals stand

	Comment	Rating against Principle
Health and Happiness	Increases in open and recreational spaces, enhancement of wildlife and habitat areas. Potential to improve local air quality through increased public transport provision	
Equity and Local Economy	Potentially large economic opportunities for the local area through increased employment and commercial opportunities.	
Culture and Community	The proposal will increase recreational outdoor spaces and help to enhance and preserve wildlife areas, however minimal information is provided on the community facilities and how they meet the local and future resident's needs.	
Land and Nature	The proposal provides a good open space allocation, is bringing a toxic site back to life, enhancing existing and creating new habitats and increasing public accessibility	
Sustainable Water	Clearly an important principle and a wealth of information has been provided showing high levels of water efficiency	
Local and Sustainable Food	There are also concerns over remediation of the land for food growing, but there are many opportunities to provide local and sustainable food through the onsite retail.	
Travel and Transport	Considerable information has been provided on connectivity within the site and potential traffic reduction measures; however, it is felt the proposal is still car dependent. The commercial spaces are approx. 1 parking space/job.	
Products and Materials	The proposal has identified an onsite material reuse strategy but no information has been provided on a site embodied energy strategy.	
Zero Waste	The current target is a 73-75% waste diversion rate. This is a good baseline, but more is needed to commit or aspire towards a Zero Waste to Landfill target.	
Zero Carbon Energy	The proposal is meeting and/or exceeding local standards on building performance and has a high level of PV onsite – but it is not meeting 100% of demand.	

Some of the key observations of the DSP are that:

- Although there is room for improvement, they are in general well aligned (or can easily be aligned) with eight of the ten One Planet Principles (namely Health and happiness, Equity and local economy, Land and nature, Sustainable water, Local and sustainable food, Products and materials and Zero carbon)
- Two principles - Travel and Transport and Culture and Community – can be improved significantly
- It remains a vehicle-dependent development – and there is a high level of car parking provided, especially for commercial spaces with almost one space per employee and that there is opportunity to improve the development considerably from this perspective
- While the DSP contains space for community uses these are not yet well defined and a clear strategy can be put in place to support onsite community development to bring greatest value to existing and new residents in the area.

6. One Planet Scenario

Setting a clear vision is essential in creating a One Planet Community (OPC); a potential vision for Baylands is to create a unique 'go local' destination, underpinned by the following key characteristics:

- Retail – creating a local destination with a high percentage of non-franchise retail
- Residential – providing a diverse range of housing types and enabling sustainable living
- Supporting community and healthy living
- All residents to be within 5-minute walk of key day to day needs

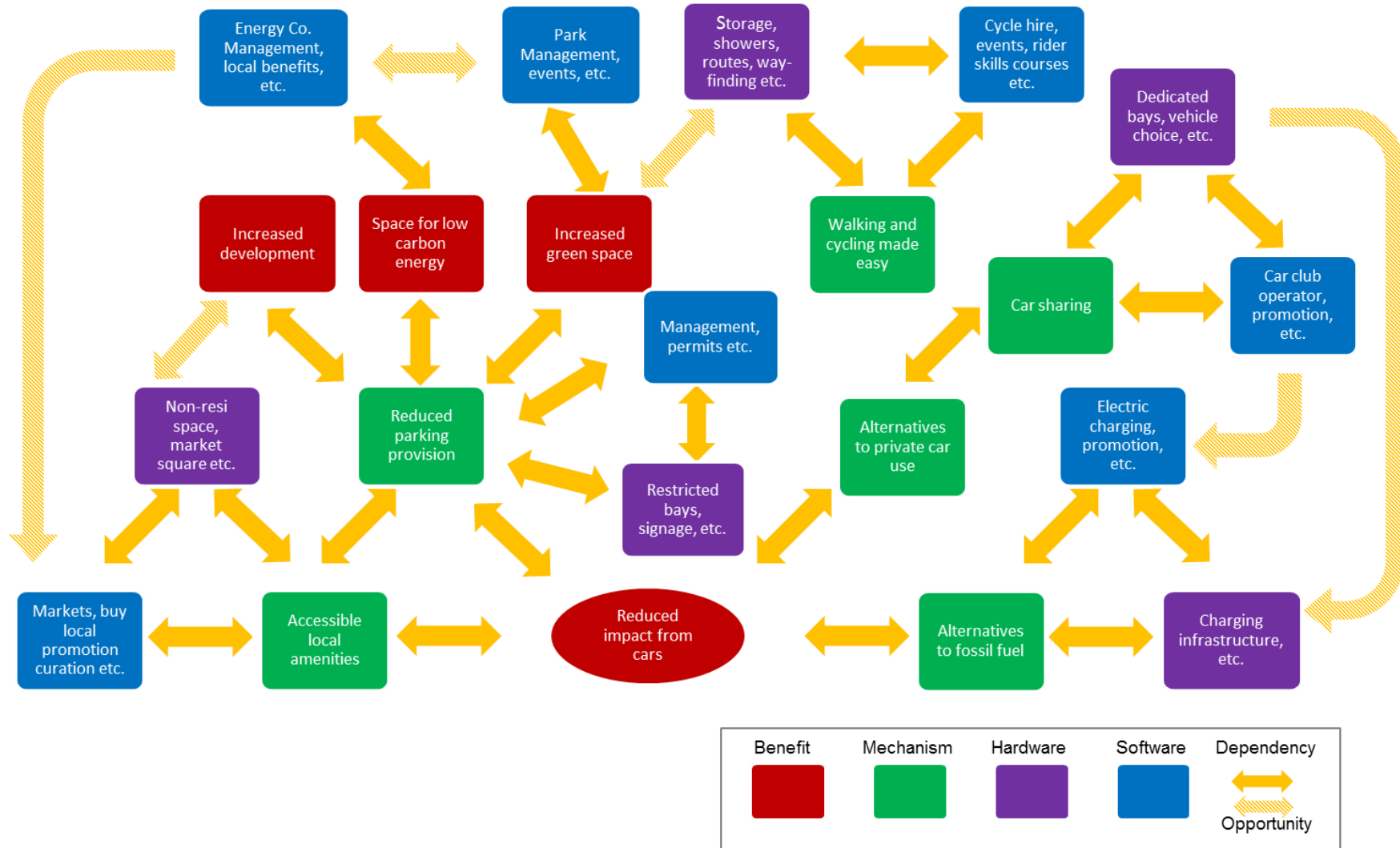
Based on this analysis Bioregional sees the opportunity for a world-class One Planet Community (OPC) to be developed at Baylands using the DSP as a starting point but with a number of targeted enhancements:

- A comprehensive approach to reducing car dependence with a significant reduction in car parking and using the space created to increase the community space available
- Creating a unique "Be local" amenities and services strategy to create a strong local community and reduce the need to travel
- Increasing the percentage of residential development, including a high level of affordable housing
- Providing high quality community facilities, alongside the existing open green space
- Involvement of local people and the city in the development and operations of the OPC
- Ensure that, as part of the complying with Mello-Roos, a long-term Neighbourhood Stewardship Body is established to oversee the operation of the community facilities and green space, and a clear financial plan developed to support this.
- Developing increased lean and clean energy solutions, potentially to provide revenue for community facilities

These are set out in the table, together with an indication of the positive benefits (↑) supported through their implementation:

	Health and Happiness			Equity and Local Economy			Culture and Community		Land and Nature			Sustainable Water		Local and Sustainable Food		Travel and Transport			Products and Materials		Zero Waste	Zero Carbon Energy			
	Air quality	Contamination	Recreation	Revenue for clean up	Job creation	Housing affordability	Equity	Retaining feel of Brisbane	Community facilities	Wildlife and habitats	Light pollution	Off-site impact	Protect quality	Reduce demand	Sustainable diets	Sustainable agriculture	Congestion	Public transport capacity	Emissions	Facility provision	Sustainable consumption	Embodied energy	Waste minimisation	100% renewable energy	Renewable energy on-site
Enhancement																									
Reducing car dependence	↑	↑	↑				↑		↑								↑	↑	↑	↑					
Create unique "Be local" amenities and services	↑	↑			↑		↑	↑	↑						↑		↑	↑	↑	↑	↑	↑			
Increase residential area with high level of affordable housing	↑					↑	↑		↑									↑	↑	↑					
Providing high quality community facilities	↑		↑						↑	↑	↑									↑					
Involve local people and City in development and operations							↑	↑	↑											↑					
Long-term Neighbourhood Stewardship Body			↑		↑	↑	↑	↑	↑	↑		↑						↑		↑	↑				↑
Lean & clean energy solutions	↑	↑		↑	↑		↑		↑															↑	↑

The developer has a key role to play in setting the vision of the project, but their importance extends throughout the project lifespan. Success depends on the integration and ongoing optimised inter-relation of hardware (e.g. reduced parking spaces) and software (e.g. demand management, cycle facilities, car sharing) aspects. The diagram below highlights some of the key relationships in this regard. The developer will play a key role in ensuring appropriate management and stewardship mechanisms are established and maintained. This will require early and ongoing engagement with relevant stakeholders. Ultimately this network approach can create a more interconnected and resilient community and achieve long-term shared value.



7. Benefits assessment

Bioregional developed a model of the different scenarios incorporating local expenditure data and local carbon footprint data. The analysis showed that the average resident of California over 40% of their expenditure was on transport and that in the case of the OPC scenario this fell by close to 70% saving over \$250 per week.

In terms of carbon emissions these fell by almost 50% in the One Planet scenario. Further reductions can be achieved by; lifestyle changes, provision of local services and wider uptake of the One Planet Principles, such as a One Planet California Initiative. The improved air quality and higher levels of physical activity will also have multiple benefits, and a more integrated community can reduce the impacts of loneliness.

An estimate was made of the potential offsite benefits generated through onsite residents and workers living more sustainably at Baylands compared to their existing lifestyles. This showed that while the OPC scenario could save close to 200 tonnes of carbon emissions per year the REA scenario has minimal savings. This analysis shows that development at Baylands can help to reduce California’s emissions and that a residentially led, zero carbon, sustainable transport orientated development – a ‘One Planet Community’ would have the largest benefit.



Grow Community, Bainbridge Island (Seattle, USA)

North America’s first occupied One Planet Community in Seattle has been very successful with promoting communal over private space



Elmsbrook, NW Bicester (Bicester, UK)

This One Planet Community in the UK has established a community group to ensure that the existing town also benefits from the new development



Credo High School, Rohnert Park (California, USA)




Credo High School in Rohnert Park will be based in the SOMO Village, a One Planet Community, and has developed its own One Planet Action Plan



















8. Conclusions and recommendations

Key observations from this analysis are listed below and the outcome of the research is summarised in the table below, which uses a traffic light rating to show how well the different options meet the desired outcomes from a local, regional and planetary perspective:

1. No one single option meets all of the local needs
2. While the CPP and REA may meet some of the local needs they also have their own negative impacts, such as increasing congestion and air pollution or not paying for the clean-up of the contaminated land
3. Maximising housing most effectively meets the regional needs, and if delivered correctly can go some way to meeting planetary needs
4. From a planetary perspective, the development option which brings the largest carbon saving will have the biggest overall environmental benefit; these are likely to be developments including a higher level of residential development. Increasing residential numbers has the potential to reduce traffic congestion in the area and improve air quality. And therefore deliver local benefits.

The opportunity exists to further optimise the benefits through the development of the One Planet Community option.

	The Scenario is well aligned with the desired outcomes, meeting most of them
	The Scenario meets some of the desired outcomes
	The Scenario does not meet a significant number of the desired outcomes

	DSP	CPP	REA	Resi-Mid	RESI - Max	OPC
Local						
Regional						
Planetary						

We recommend that the developer and the city work consider the conclusions of this report and work together to maximise the local, regional and planetary benefits which can accrue from the Baylands development and turn aspiration into reality.

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Baylands One Planet Review

June 2017: Ben Gill MA (Cantab), Lewis Knight MSc, Nick James MSc and Pooran Desai MA (Oxon) OBE.

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1. Executive Summary

Bioregional were commissioned by Universal Paragon Corporation (UPC) to undertake a review of the options for the Baylands proposal but have aimed to maintain as objective a standpoint as possible. To do this we have reviewed the desired outcomes at the Baylands through three lenses: local needs, regional needs and planetary needs. We have also undertaken a review of the UPC proposal against the One Planet Principles.

Local, regional and planetary needs and wants were catalogued. Following this, the UPC proposal and a range of alternative scenarios were compared to the local, regional and planetary needs. The potential impacts on household expenditure and carbon emissions were also assessed. The scenarios assessed were:

1. The UPC proposal – called the Developer Sponsored Proposal (DSP)
2. The Community Proposed Plan – with no housing (CPP)
3. The Renewable Energy Alternative with minimal development (REA)
4. A version on the DSP with a higher level of residential accommodation in line with the housing/job ratio suggested in the Plan Bay Area 2040 (DSP Resi-Mid)
5. An additional residential option with a still higher level of residential accommodation (DSP Resi-Max)

The analysis of these were scenarios was used to propose an alternative One Planet Community (OPC) option. This is not a detailed proposal but used to illustrate how an alternative approach can help to optimise the desired outcomes.

Key observations from this analysis are:

1. No one single option meets all of the local needs
2. While the CPP and REA may meet some of the local needs they also have their own negative impacts, such as increasing congestion and air pollution or not paying for the clean-up of the contaminated land
3. Maximising housing most effectively meets the regional needs, and if delivered correctly can go some way to meeting planetary needs
4. From a planetary perspective, the development option which brings the largest carbon saving will have the biggest overall environmental benefit. The CPP and REA options have the least benefit in terms of carbon saving and the DSP and Resi-Max the largest. Increasing residential numbers has the potential to reduce traffic congestion in the area and improve air quality. And therefore deliver local benefits.

Some of our key observations of the UPC proposals are that:

- Although there is room for improvement, they are in general well aligned (or can easily be aligned) with eight of the ten One Planet Principles (namely Health and happiness, Equity and local economy, Land and nature, Sustainable water, Local and sustainable food, Products and materials and Zero carbon)
- Two principles - Travel and Transport and Culture and Community – can be improved significantly
- It remains a car dependent development – and there is a high level of car parking provided, especially for commercial spaces with almost one space per employee and that there is opportunity to improve the development considerably from this perspective
- While the UPC proposals contain space for community uses these are not yet well defined and a clear strategy can be put in place to support onsite community development to bring greatest value to existing and new residents in the area.

Based on this analysis Bioregional see the opportunity for a world-class One Planet Community (OPC) to be developed at Baylands using the UPC proposal as a starting point but with the following enhancements:




- A comprehensive approach to reducing car dependence with a significant reduction in car parking
- Using the space to increase the community space available
- Increasing the percentage of residential development, including a high level of affordable housing
- Providing high quality community facilities, alongside the existing open green space
- Involvement of local people and the city in the development and operations of the OPC
- Developing a long-term management plan to oversee the operation of the community facilities and green space, and developing a clear financial plan to support this.



















With forecasts of sea-level rise happening faster than previous estimates, very careful consideration needs to be given to impacts such as potential leaching of the landfill.

The outcome of the research is summarised in the table below, which uses a traffic light rating to show how well the different options meet the desired outcomes from a local, regional and planetary perspective. While the CPP and REA may be preferred at the local level, they do not meet significantly more of the local desired outcomes and produce fewer benefits at the regional and planetary level. For example:

- The REA provides no funding for site clean-up
- The CPP has a greater negative air quality impact than the DSP
- Both the REA and the CPP miss opportunities to reduce congestion and carbon emissions at the regional level limiting development in such a well-connected location.

The opportunity exists to further optimise the benefits through the development of the One Planet Community option.

	The Scenario is well aligned with the desired outcomes, meeting most of them
	The Scenario meets some of the desired outcomes
	The Scenario does not meet a significant number of the desired outcomes

	DSP	CPP	REA	DSP - Resi-mid	DSP - Resi-max	OPC
Local						
Regional						
Planetary						

2. Role of this document

The aim of this document is to record our review of development options for the Baylands site. The site's proposed development is controversial. It is currently a contaminated landfill site. It lies within a small city, and its redevelopment has the potential to substantially increase the local population. The area has significant housing demand and affordability challenges, as well as increasing demands on the existing transport network. Aiming to be as objective as possible, and recognising that there is no single 'right answer', this report asks the question: what is best way to develop the site?

3. Project Brief

To provide an objective perspective, Bioregional considered the development impacts and benefits of the Baylands through three lenses: local, regional and planetary. This analysis is supported by a range of case studies which illustrate how identified impacts and benefits can be addressed in an optimised way on the Baylands site.

The following steps were undertaken:

1. Assessment of desired outcomes – needs and wants
 - Data gathering
 - Alignment of needs
2. Scenarios
 - Development based on needs
 - Scenario Analysis
3. One Planet Gap Analysis of UPC proposal
4. One Planet Community concept
 - One Planet Community proposal
 - Case studies of opportunities
 - Potential benefits

The overall objective is to create the basis on which the best possible outcome will be delivered from local, regional and planetary perspectives, in order to bring increased value to the local community, city and the developer.

4. Needs Assessment

A desk based review was undertaken to identify the desired outcomes at a local, regional and planetary level – sources shown below.

4.1. Local Desired Outcomes

An assessment of the needs and views of local residents within Brisbane about the Baylands development area has been undertaken – (see section 4.1.2 for references). This has been mapped out to identify the key priorities and also mapped against the 10 One Planet Principles.

4.1.1. Priority mapping

The diagram below highlights the key priorities – the references are provided in following table.



4.1.2. Mapping against the One Planet Principles

The table below highlights how the local needs map to the One Planet Principles

One Planet Principle	Brisbane Local need	Reference
Health and Happiness	<ul style="list-style-type: none"> 89% of residents (from survey) think air quality is an extremely important issue for the site 79% of residents (from survey) think preserving local views is an extremely important issue for the site Close proximity to schooling¹ Improving visual appeal of the area as whole Enhancing recreational uses 	<p>City of Brisbane Baylands Survey 2015</p> <p>Local resident comments</p>
Equity and Local Economy	<ul style="list-style-type: none"> 75% of residents (from survey) think generating enough revenue from the site to pay for needed infrastructure is an extremely important issue for the site Need for commercial and retail space Affordability of housing for future generations² Mixed use development to promote economic sustainability³ Mixed feelings over housing 43% want none and 50% want some Housing that working families can afford Connecting Baylands with Brisbane 	<p>City of Brisbane Baylands Survey 2015</p> <p>Local resident comments</p>
Culture and Community	<ul style="list-style-type: none"> 78% of local survey indicate proactive engagement of city with developers of Baylands Worried over levels of proposed housing and how this will affect the feel and style of existing Brisbane 	<p>City of Brisbane Baylands Survey 2015</p>
Land and Nature	<ul style="list-style-type: none"> 86% of residents (from survey) think reducing and containing contaminants is an extremely important issue for the site 74% of residents (from survey) think improving and enhancing open spaces and wildlife habitats is an extremely important issue for the site Making use of an un-used 'toxic' bit of land⁴ 90% of residents (from survey) support preserving open spaces and wetlands for any new development site 	<p>City of Brisbane Baylands Survey 2015</p>
Sustainable Water	<ul style="list-style-type: none"> 88% of residents (from survey) think protecting water quality in local creeks/streams is an important issue for the site 75% of residents (from survey) think utilising recycled and reclaimed water is an extremely important issue for the site Potential issues with lack of water and impact on poor communities if water prices increase?⁵ 	<p>City of Brisbane Baylands Survey 2015</p> <p>Brisbane Planning Commission meeting minutes</p>

1 <http://brisbaneca.org/sites/default/files/08-25-16%20Quano-Dodd%20Comments.pdf>

2 <http://brisbaneca.org/sites/default/files/08-24-16%20Follieni%20Comments.pdf> and <http://brisbaneca.org/sites/default/files/08-22-16%20Kilcoyne%20Comments.pdf>

3 <http://brisbaneca.org/sites/default/files/08-24-16%20Needham%20Comments.pdf>

4 <http://brisbaneca.org/sites/default/files/08-22-16%20Lee%20Comments.pdf>

5 <http://brisbaneca.org/sites/default/files/2016-08-25PCMinutes.pdf>

Local and Sustainable Food	No specific needs identified	
Travel and Transport	<ul style="list-style-type: none"> 80% of residents (from survey) think minimising traffic impacts from the site is an extremely important issue for the site 84% of residents (from survey) support the creation of new cycle tracks and paths for any new development 79% of residents (from survey) support the building of a new transit hub for trains/buses etc... for any new development Traffic and congestion issues – worried about increasing this with new housing and development⁶ 	<p>City of Brisbane Baylands Survey 2015</p> <p>Local resident comments</p>
Products and Materials	No specific needs identified	
Zero Waste	<ul style="list-style-type: none"> 72% of residents (from survey) think minimising landfill waste generated from any new site is an extremely important issue for the site 	<p>City of Brisbane Baylands Survey 2015</p>
Zero Carbon Energy	<ul style="list-style-type: none"> 67% of residents (from survey) think ensuring any development can generate enough renewable energy is an extremely important issue for the site 79% of residents (from survey) support the building of new renewable energy generation facilities for any new development Promotion of clean energy for local area⁷ Potential to harness renewable energy for existing Brisbane 	<p>City of Brisbane Baylands Survey 2015</p> <p>Local resident comments</p>

4.2. Regional desired outcomes

The documents viewed as key in defining the desired outcomes at the regional level were:

- Plan Bay Area 2040 – Draft Plan, May 2017
- Bay Area Council – Economic profile of Bay Area - <http://www.bayareaeconomy.org/files/pdf/BayAreaEconomicProfile2012Web.pdf>
- 2017 Bay Area Council Poll - <http://www.bayareacouncil.org/2017-bac-poll/>
- LAO report: <http://www.lao.ca.gov/reports/2015/finance/housing-costs/housing-costs.pdf>
- BAC report - slowing job growth report: <http://www.bayareaeconomy.org/bay-area-job-watch-15/>

Additional documents reviewed included:

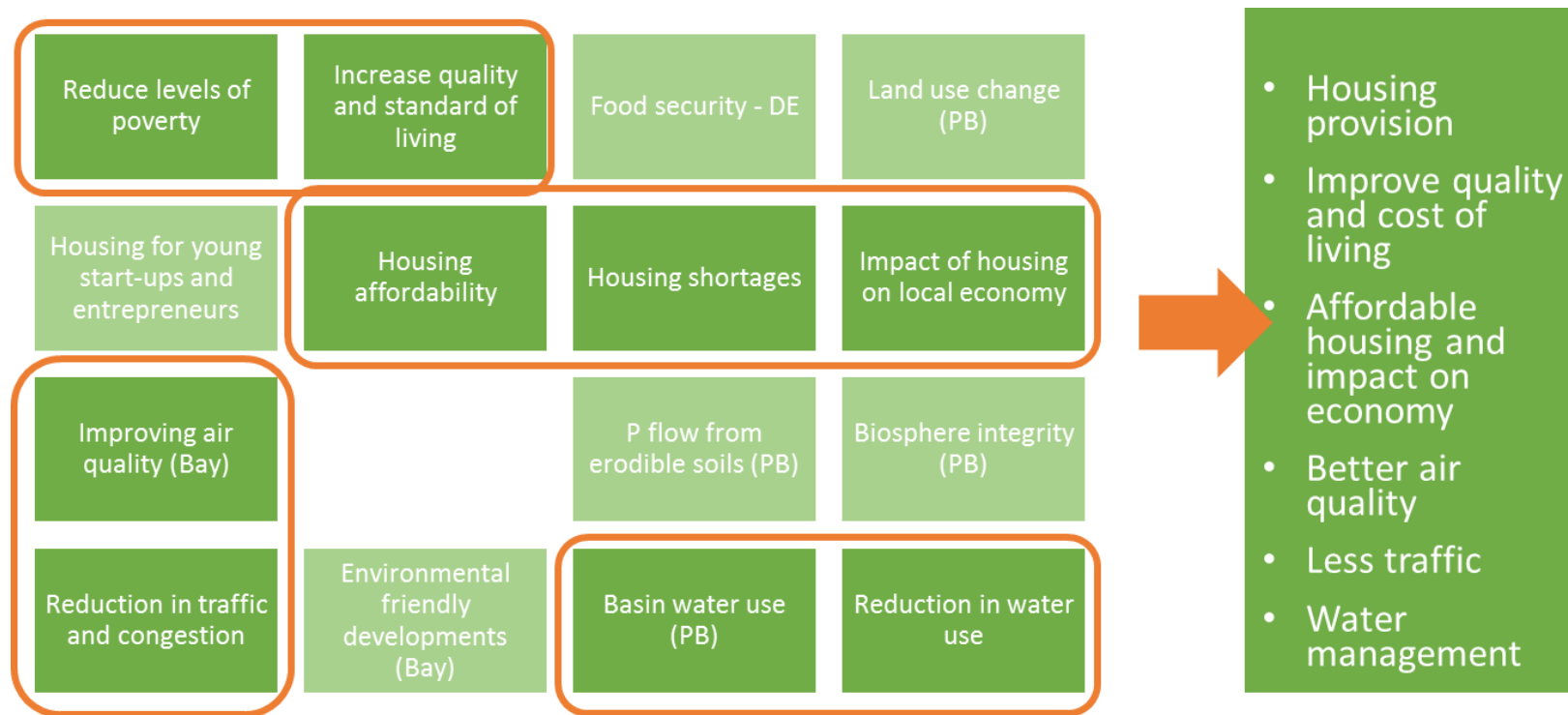
- Sustainable San Mateo Indicators Report, www.sustainablesanmateo.org/home/indicators/key-indicator-cost-of-living/
- Greenbelt Alliances At Risk report: www.greenbelt.org/at-risk-2017/

⁶ <http://brisbaneca.org/sites/default/files/08-05-16%20Mackin%20comments.pdf>

⁷ <http://brisbaneca.org/sites/default/files/08-01-16%20Nieminen%20comments.pdf>

- County of San Mateo Energy Efficiency Climate Action Plan
- County of San Mateo – General Plan
- Bay Area Council – Commute patterns and labour supply for San Mateo County
- Bay Area Council – Limits on Home Sharing
- Bay Area Council - Solving the housing affordability crisis
- Bay Area Council – Connectivity of the Northern California Megaregion
- Bay Area Council – Economic profile of Bay Area -
- Bay Area Council – Regional economic strategy -
- Bay Area Council - San Francisco Bay Area Rapid Transit District -
- Summary of housing bills: <http://www.oregister.com/2017/05/01/key-housing-bills/>

These are shown in the diagram below



4.3. Comparison of desired outcomes at each level

The table below shows the fuller list of desired outcomes at the local, regional and planetary level.

Note:

- Text in green highlights a common outcome.
- Where references are not provided in the previous table they are provided in parentheses. They are:
 - EIR – Key impact identified in the Environmental Impact Report
 - SFB - Sustainability Framework for the Baylands (2015)
 - DE – Doughnut Economics⁸ – an approach that outlines basic human needs
 - PB – Planetary Boundaries⁹ – a scientific approach aimed at identifying key thresholds that the planet should not pass
 - OP – One Planet requirements at a global level

One Planet Principle	Local need (Brisbane)	Regional needs (Bay area)	Planetary needs
Health and Happiness	<ul style="list-style-type: none"> • Improving and ensuring high levels of air quality • Preservation of local views • Close proximity to schooling • Improving visual appeal of the area as whole • Enhancing recreational uses • Protection of views of San Bruno Mountain (EIR) • Construction impact (EIR) 	<ul style="list-style-type: none"> • Improving air quality • Food Security (DE) 	<ul style="list-style-type: none"> • Food Security (DE) • Air quality and health (OP)
Equity and Local Economy	<ul style="list-style-type: none"> • Generating revenue from the site to pay for needed infrastructure • Need for commercial and retail space • Affordable housing for future generations • Mixed use development to promote economic sustainability • Housing that working families can afford • Connecting Baylands with Brisbane 	<ul style="list-style-type: none"> • Housing shortages • Housing affordability • Reduce levels of poverty • Increase quality and standard of living • Housing for young start-ups and entrepreneurs 	<ul style="list-style-type: none"> • Equity and equality (DE)
Culture and Community	<ul style="list-style-type: none"> • Proactive engagement with developers of Baylands • Retain the 'feel', 'style' and 'culture' of Brisbane 		<ul style="list-style-type: none"> • Community facilities provision (OP)
Land and Nature	<ul style="list-style-type: none"> • Remediation of contaminated land for any development • Light Pollution from increased street lighting (EIR) • Improving and enhancing open spaces and wildlife 	<ul style="list-style-type: none"> • Biosphere integrity (PB) • Land use change (PB) • Infill development to preserve open space and greenbelt 	<ul style="list-style-type: none"> • Reduce ocean acidification (PB) • Decrease land use changes (PB) • Reduction in Ozone depletion (PB) • Reduce species extinction rates

⁸ <https://www.kateraworth.com/doughnut/>

⁹ <http://www.nature.com/news/specials/planetaryboundaries/index.html>

	<ul style="list-style-type: none"> habitats Preserving open spaces and wetlands 	(Greenbelt Alliance)	(PB)
Sustainable Water	<ul style="list-style-type: none"> Protect local water quality Utilising recycled and reclaimed water 	<ul style="list-style-type: none"> Reduction in water use (PB) Basin water use (PB) 	<ul style="list-style-type: none"> Reduce global water use (PB)
Local and Sustainable Food	<ul style="list-style-type: none"> Promote sustainable diets based on local produce (SFB) 	<ul style="list-style-type: none"> Phosphate runoff from erodible soils (PB) Promote local economy 	<ul style="list-style-type: none"> Increase food security (DE) Reduce phosphate runoff into oceans (DE) Reduce Nitrate runoff (PB) Sustainable diets (OP)
Travel and Transport	<ul style="list-style-type: none"> Minimising traffic impacts from any proposed site Creation of new cycle tracks and paths for any new development Building of a new transit hub for trains/buses Ability of public transit network to cope with demand (EIR) Traffic and congestion issues 	<ul style="list-style-type: none"> Reduction in traffic and congestion Encourage alternative transportation 	<ul style="list-style-type: none"> Decrease in global greenhouse gas emissions (PB)
Products and Materials	<ul style="list-style-type: none"> Construction and property maintenance to use low impact materials 		<ul style="list-style-type: none"> Novel products (PB) Sustainable Consumption / Sharing economy (OP) Low embodied energy (OP)
Zero Waste	<ul style="list-style-type: none"> Minimise waste generation from any proposed site 		<ul style="list-style-type: none"> Effective waste management (OP)
Zero Carbon Energy	<ul style="list-style-type: none"> Generation of renewable energy on site Promotion of clean energy for local area Potential to harness renewable energy for existing city of Brisbane Greenhouse Gas emissions (EIR) 	<ul style="list-style-type: none"> Environmental friendly developments 	<ul style="list-style-type: none"> Decrease in global greenhouse gas emissions (PB)

4.4. Desired outcomes summary

A comprehensive review was conducted to understand the most important needs for local residents in Brisbane. A web-based review was conducted to search and understand public comments made and documented on the Brisbane planning website. Additionally, a review of the City of Brisbane Baylands survey (2015) was also used.

Using these sources, we have identified the key priorities in the table below:

Issue/need identified	Rationale
1. Remediation of contaminated land	Almost 90% of survey responses considered the remediation of the Baylands site was very important. This sentiment of making use of 'toxic' land was also picked up in public comments.
2. Air quality	Almost 90% of survey responses considered improving air quality as very important for the future Baylands development. This is closely linked with the fear of increased traffic and congestion
3. Reducing water usage and protecting water courses	Almost 90% of survey response thought preserving water courses was very important and 75% of respondents thought minimising water use (using reclaimed/recycled water) was very important
4. Minimising transport impacts	80% of survey respondents feel this is a very important issue. This was also picked up in several public comments. Due to the strategic location of the site, this is clearly an important local issue.
5. Retaining scenic views	Almost 80% of survey responses thought retaining views was extremely important to the Baylands site. This feeling was also picked up in public comments
6. Creating and preserving habitats and wildlife areas	90% of survey responses supported preserving open spaces and wildlife habitats

Following this analysis of local needs, a regional assessment was conducted. This included the review of key San Mateo and Bay Area documents. The key regional priorities identified are:

1. Housing shortage and housing affordability
2. Traffic and congestion
3. Poverty and the cost of living
4. Air quality and over development
5. Economic issues (inc. housing shortage could stifle innovation and push young millennials away)

A full assessment of local, regional and planetary needs can be found in the supporting PDF document.

Using our assessment of Local (Brisbane residents), regional (San Francisco Bay area) and planetary needs we can begin to identify cross cutting themes. We have identified five.

1. Reduction in transport/traffic and congestion, thus reduce greenhouse gas emissions, ozone depletion and global climate change
2. Reduction in water usage
3. Improving, enhancing and creation natural wildlife spaces
4. Increasing affordability of housing for all, thus helping to promote equity
5. Increasing air quality, thus improving health outcomes at the same time as reducing the release of Green House Gases

The themes are based on what we feel are the priorities on a local level. There are other local issues that would align with regional and planetary needs, but these were identified from a small number of individual responses. We have omitted these as we are unsure of their more widespread acceptance within the Brisbane community.

The key local regional and planetary needs are shown in the table below.

Need	Local	Regional	Planetary
1.	Remediation of contaminated land	Housing shortage and housing affordability	Habitat and biodiversity loss
2.	Air quality protection	Traffic and congestion	Greenhouse gas emissions
3.	Reducing water usage and protecting water courses	Poverty / cost of living	Global Equity (linked to consumption)
4.	Minimising traffic and congestion	Air quality and over development	Chemical and novel product use (e.g. fertilisers)
5.	Retaining scenic views	Economic impact of lack of affordable housing	
6.	Preservation and creation of habitat	Protection of water	

4.4.1. Opportunities

This analysis has shown that while there is some conflict between the desired outcomes at the local regional and planetary level, there is also considerable overlap. Local emissions and air quality, water conservation, traffic impacts and contamination and habitat protection are themes that cut across all three levels. Therefore, by identifying strategies that address these all these issues in a coherent fashion an optimised development proposal can be developed.

5. Baylands Scenarios

The Baylands site is a unique opportunity and as such the range of development scenarios are extremely broad. In order to restrict the range of options the following approach was taken:

1. Use the two key options assessed in the Environmental Impact Report (EIR) of June 2013:
 - a. The Developer Sponsored Proposal (DSP)
 - b. The Community Preferred Proposal (CPP)
2. Use the Renewable Energy Alternative (REA) as proposed by [CREBL](#). Although this scenario is not comprehensively reviewed in the EIR it is the basis of the recommendation made by the Planning Commission dated 29th September 2016
3. Create two separate residentially-led developments that are in line with the jobs to dwelling ratios proposed in Plan Bay Area 2040 – DSP Resi-Mid and DSP Resi-Max
4. Propose a One Planet Community solution based on the analysis undertaken.

5.1. Development Scenarios

5.1.1. Developer Sponsored Proposal

The key sources of information for creating this scenario were:

1. The Draft EIR report (June 2013)
2. The Draft Specific Plan (February 2011)
3. Developer proposal to the Planning Commission on the 10th December 2015
4. The Baylands Sustainability Framework (October 2015)

5.1.2. Community Proposed Plan

There are two main sources of information:

1. The Draft EIR report (June 2013)
2. The masterplan document produced for the community

5.1.3. Renewable Energy Alternative

While the REA is not covered in detail in the EIR there is some information in it, specifically in Appendix N. There is also a little more information available at:

1. [The Committee for Renewable Energy in the Baylands](#)
2. The recommendations made by the Planning Commission on September 29th 2016

5.1.4. Residentially led development

No documents contain a specific proposal with increased levels of residential development, yet at a regional level housing is recognised as the key issue. The Plan Bay Area 2040 draft plan was released in March 2017 and it provides guidelines (page 43) on the proposed jobs/housing ratio for the; the three big cities (San Francisco, Oakland and San Jose), Bay Area, outer areas. Additionally the Land Use Modelling supplementary report provides specific growth targets for Brisbane. These are shown in the table below.

	New jobs	New houses	Job/house ratio
Big Three Cities	557000	373000	1.49
Bayside	507000	272000	1.86
Inland, Coastal, Delta	212000	175000	1.21
Brisbane	11700	4600	2.5

Baylands is a unique project and one of its unique features is its location. The site itself is bordered by:

- San Francisco to the North (Visitacion Valley)
- San Mateo County (Daly City) to the North West
- Brisbane to the West and South

Heading south from Brisbane is the San Bruno Mountain State Park and San Francisco South.

Therefore although Baylands is part of Brisbane and within the Bayside area, the development area actually borders San Francisco, and should arguably be treated as part of San Francisco (ie part of the Big Three Cities). Therefore, in the DSP Resi–Mid scenario the job/housing ratio was set as 1.7. In the DSP Resi–Max scenario this ratio was made as low as possible and the figure of 0.75 was chosen to analyse the impact of maximising the residential component of the development. This is not an unrealistically low ratio for an urban redevelopment project, for example the Ljburg, Amsterdam is 0.6.

5.2. Scenario characteristics

Within the EIR information is provided on:

- Employment – number of jobs and number per sq ft
- Onsite energy generation
- Quantities of water
- Open space areas
- Total number of trips
- Total emissions
-

Additionally in the Specific Plan information is provided on the number of car parking spaces per sq. ft.

This information has been used to complete the analysis of the key characteristics of each scenario and is summarised in the table below:

Principle			DSP	CPP	REA	Resi-Mid	Resi-Max
Health and Happiness	Green open space/total Brisbane resident		4.9	33	33	4.2	3.3
	Vehicle emissions	increase over baseline	5	5.9	?	?	?
Equity and Local Economy	Jobs	number	16000	15500	3200	11500	7000
	Homes	number	4500			6800	9150
	Ratio		3.5			1.7	0.75
Culture and Community	Community facilities						
Land and Nature	Open space	acres	196	330	330	196	196
	Green open space		169			169	169
Sustainable Water	Water demand (EIR)		1.55	1.2	0.3	1.6	1.55
Local and Sustainable Food	Food Growing area	acres					
Travel and Transport	Parking spaces	number	22,500	20,000	3,000	20,000	16,500
	New Vehicle Trips	number	42,000	77,000	??	~ 35,000	~25,000
Products and Materials							
Zero Waste							
Zero Carbon Energy	Onsite generation	MWh	42,500	48,000	44,000	42,500	
	% of demand		58%	70%	> 100%	59%	
Area	Built area	mi sq ft	12.1	8.3	2	12.1	12.1

5.3. Scenario analysis

Each scenario was analysed against the full list of key desired outcomes, assessing the potential benefit or impact. This is shown in the supporting PDF document. This was then summarised in the table below using a traffic light system whereby:

	The Scenario is likely to have a positive impact on the specified desired outcome
	The Scenario is like to have a neutral impact on the outcome, or more information is required to be definitive
	The Scenario is likely to have a negative impact on the desired outcome

Principle		DSP	CPP	REA	Resi-Mid	Resi-Max
Health and Happiness	Air quality					
	Contamination					
	Recreation					
Equity and Local Economy	Revenue for clean up					
	Job creation					
	Housing affordability					
	Equity					
Culture and Community	Retaining the feel of Brisbane					
	Community facilities					
Land and Nature	Wildlife and habitats					
	Light pollution					
	Off-site impact					
Sustainable Water	Protect quality					
	Reduce demand					
Local and Sustainable Food	Sustainable diets					
	Sustainable agriculture					
Travel and Transport	Congestion					
	Public transport capacity					
	Emissions					
	Facility provision					
Products and Materials	Sustainable consumption					
	Embodied energy					
Zero Waste	Waste minimisation					
Zero Carbon Energy	100% renewable energy					
	Renewable energy on-site					

Comparison of the major desired outcomes against the proposed scenarios reveals:

- No options stands out – all have strengths and weaknesses
- Although the REA has the fewest local impacts, it fails to meet some key requirements – such as paying for site remediation or improving transport facilities. It also obviously provides no housing.
- While there is a local desire not to have high levels of residential onsite, increased residential is likely to reduce the negative impacts on air quality and congestion – potentially making it a more desirable option even at the local level.

6. UPC Gap Analysis against One Planet Goals

A more detailed Gap Analysis was conducted of the DSP, comparing the information provided in the key documents listed in section 5.1.1 against the goals set out in the One Planet Communities Goals and Guidance document. The Gap Analysis was high level and limited to a few key documents, as the project is very large and the amount of supporting documentation is extensive, and to undertake a complete fully referenced Gap Analysis was beyond the scope of the project.

The aim was to identify where the current proposals are well placed to meet the goals of One Planet Living, and where there is likely to be gap. It is acknowledged that the developer is continuing to develop the proposals, so this should be viewed as a snapshot in time. We would encourage the developer to be more explicit at this early stage about certain commitments such as to involvement of the community in long term management which falls under the 'Culture and Community' principle. The full gap analysis can be found in the supporting PDF document, and a summary table and key recommendations are provided below, whereby:

	The current proposals are will aligned with One Planet Goals
	The current proposals have taken good steps to address the Goal and with further development as the project progresses could become aligned with the One Planet Goals
	The current proposals are not well aligned with One Planet Goals as the proposals stand

One Planet Principle	Comment	Rating against Principle (Red/ Amber/Green)
Health and Happiness	Increases in open and recreational spaces, enhancement of wildlife and habitat areas. Potential to improve local air quality through increased public transport provision	Green
Equity and Local Economy	Potentially large economic opportunities for the local area through increased employment and commercial opportunities.	Green
Culture and Community	The proposal will increase recreational outdoor spaces and help to enhance and preserve wildlife areas, however minimal information is provided on what community facilities will be provide and where. 0.25% of the proposal area has been defined as 'Civic' - It is not clear what these will be and whether they meet the local and future resident's needs.	Red
Land and Nature	The proposal provides a good open space allocation and is bringing a currently, vacant, toxic site back to life and accessible to the public. The proposal also outlines considerable access and wildlife benefits by increasing movement across the site and enhancing existing and creating new habitats.	Green
Sustainable Water	Clearly an important principle and a wealth of information has been provided. There is the opportunity for the creation of site wide water recycling and storm water alleviation, however water standards (efficiency) seem high compared to other developments.	Green
Local and Sustainable Food	Limited information has been provided on food growing spaces within the development site. There are also concerns over remediation of the land for food growing. More certainty needed - plays a big part in ecological and personal footprinting	Amber
Travel and Transport	Considerable information has been provided on connectivity within the site and potential traffic reduction measures; however it is felt the proposal is still car dependent. The commercial spaces are approx. 1 parking space/job.	Red
Products and Materials	The proposal has identified an onsite material reuse strategy but no information has been provided on a site embodied energy strategy.	Amber
Zero Waste	The current target is a 73-75% waste diversion rate. This is a good baseline, but more is needed to commit or aspire towards a Zero Waste to Landfill target.	Amber
Zero Carbon Energy	The proposal is meeting and/or exceeding local standards on building performance and has a high level of PV onsite - but it is not meeting 100% of demand.	Amber

Key recommendations from the gap analysis are provided below. They have been organised under each of the 10 One Planet Principles.

Health and Happiness

- Strategy outlining how UPC can help create community on site (e.g. welcome event, activity days, encouraging community groups/events, working with skills, knowledge and interests of residents to build a unique site identity)

Equity and Local Economy

- Opportunity to employ construction apprenticeships
- Affordable housing strategy to be developed

Culture and Community

- Investigation into community facilities on site through the ongoing community consultation and engagement
- Further detail on how the design of the development fits to the local history and heritage of the site and wider communities
- Maximise the opportunities for community governance and involvement for example by enhancing the provisions in the Mello-Roos
- What can be done to help create a culture of sustainability amongst new residents?

Land and Nature

- Detailed surveys required to understand current biodiversity levels and what protected species are present
- Details to be provided on buffers between development areas and habitat spaces (in both designs and during the construction process)
- Aspiration for a no net loss biodiversity target? Other One Planet Communities have committed to net biodiversity gain targets.

Sustainable Water

- Ideally set clear water efficiency standards for individual dwellings, such as a litres/person/day figure
- Details to water reduction and water efficiency practices during the construction processes

Local and Sustainable Food

- From both a health and environmental prospective people need to move towards diets high in local, seasonal, organic produce, and lower in animal protein. Events, food outlets and awareness-raising can all contribute to this.
- It is understood that the site is contaminated but there may still be opportunities to provide community gardens, orchards and fruit trees, as well as running a programme of education about healthy diets within workplaces and schools.
- Opportunities could be sought with on-site cafe's restaurants and suppliers to use local, fresh food.
- Potential to increase growing in place of some parking spaces (flexible spaces)

Travel and Transport

- Significant reduction in site parking provisions – particularly for the commercial spaces
- Designation of a large part of the site as a car-free destination
- Ensure adequate cycling storage and changing facilities for all employers
- Management plan to ensure Transport Demand Management incentives are enacted (such 'trip caps' at the Facebook campus)
- Make sure sustainable transport options are offered early on as people's transport behaviours quickly become ingrained and so interim solutions may be required.
- Promotion of electric and Ultra Low Emissions Vehicle solutions, such as charging points in all homes and public realm, support for an E-bike clubs; and consideration of self-driving cars.

Products and materials

- Carry out a site audit to identify demolition materials and buildings that could be restored/refurbished or reused
- Strategy reduce the embodied energy and lifecycle impact of the buildings (e.g. target 40% embodied energy reduction over standard)
- Site specification/design code to ensure selection of natural, renewable, recycled, non-toxic materials.
- Development of local organisations to explore skills and tool share service and promote local resourcefulness. Investigation into partnering with local reuse/skills centre to promote DIY/upcycling.

Zero Waste

- Strategy to for designing out waste at the construction stage - it is noted that this will be developed through LEED criteria (off-site construction, simple building design, buy-back contracts, standardisation of form etc)
- Look to set ambitious targets for recycling/composting for the site once occupied. Perhaps with a residual waste target

Zero Carbon Energy

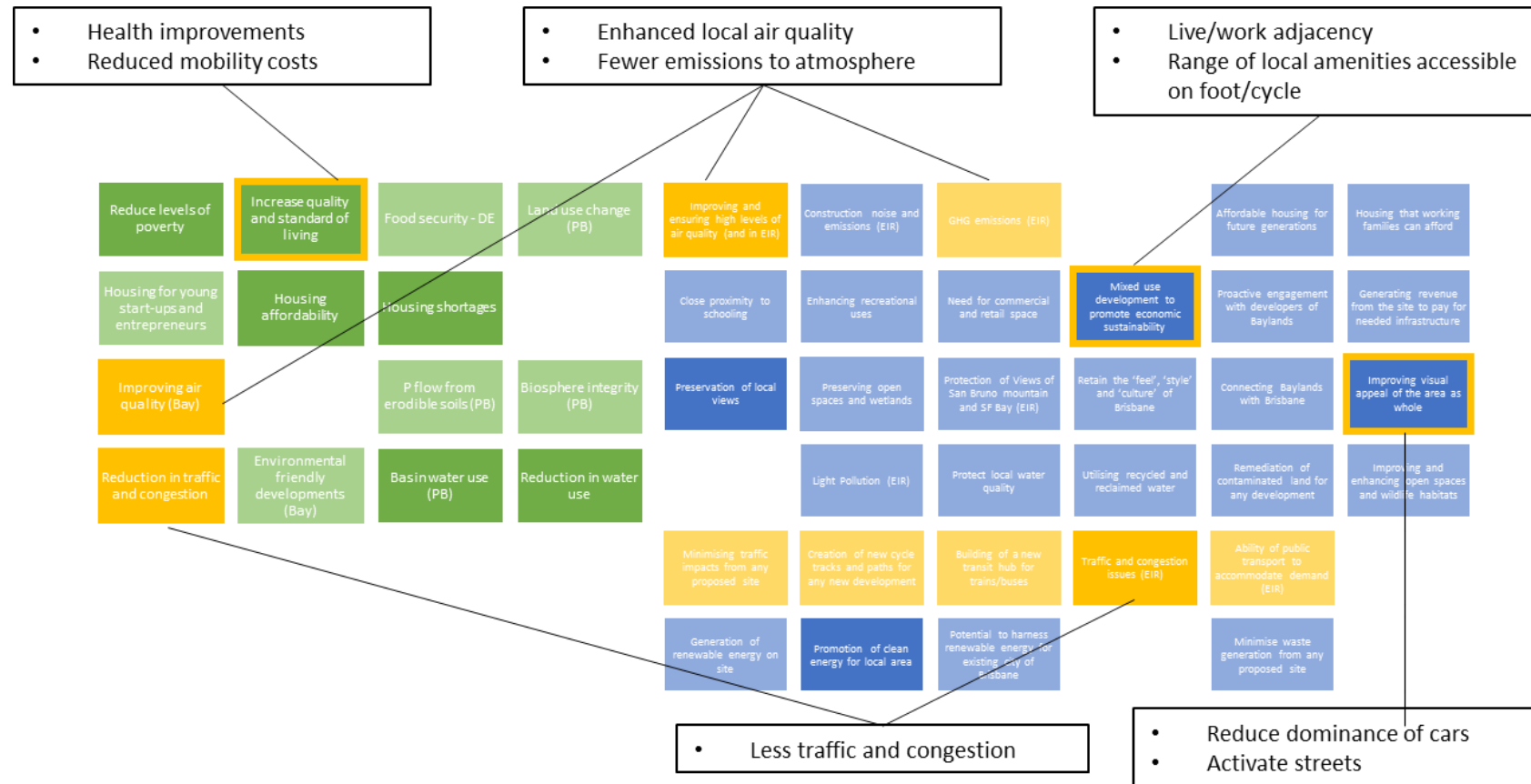
- Development of a Zero Carbon Energy strategy for the entire site

7. One Planet Community Proposal

Through the desired outcomes review and gap analysis a number of opportunities were identified that could help minimise any local impact of the development, while maximising the regional and planetary benefits:

- Developing a sustainable mobility plan and reducing the area of car parking to reduce impact on air quality and congestion
- Maximising the access to green space provided through a Community Park to improve health and wellbeing for all residents
- Creating a unique “Be local” amenities and services strategy to create a strong local community and reduce the need to travel
- Establishing a long –term Neighbourhood Stewardship Body to oversee the interaction the various management organisations and ensure viability of the community facilities
- Developing increased lean and clean energy solutions, potentially to provide revenue for community facilities

This process is depicted graphically on the diagram below:



7.1. Specific characteristics of the One Planet Community

Based on the analysis undertaken a One Planet Community scenario was undertaken, using the following guidelines:

- Reducing car parking significantly – overall a minimum of 50% reduction in parking, with car free areas
- Allocating the additional space to community uses
- Assuming the total built area would remain the same as for the DSP
- Aiming for a jobs/housing ratio of 1.7 as specified in Plan Bay Area 2040

It is important to note this is not a proposal of what should be on the site – it is merely an investigation of the likely impact of changing the development proposal.

Principle			One Planet Community
Health and Happiness	Green open space/total Brisbane resident		3.9
	Vehicle emissions	increase over baseline	
Equity and Local Economy	Jobs	number	13000
	Homes	number	7500
	Ratio		1.7
Culture and Community	Community facilities		
Land and Nature	Open space	Acres	205
	Green open space		178
Sustainable Water	Water demand		0.65
Local and Sustainable Food	Food Growing area	Acres	10
Travel and Transport	Parking spaces	number	Less than 10,000, Target 5,000?
	New Vehicle Trips	number	~ 15,000
Products and Materials			
Zero Waste			
Zero Carbon Energy	Onsite generation	MWh	
	% of demand		100%
Area	Built area	mi sq ft	13.2

7.2. One Planet Vision

Setting a clear vision is essential in creating a One Planet Community, a potential vision for Baylands is to create a unique 'go local' destination, underpinned by the following key characteristics:

- Retail – creating a local destination
- Residential – providing a diverse range of housing types and enabling sustainable living
- Supporting community and healthy living

Each of these aspects can be worked up in more detail for example for the retail could include:

- 70% non-franchise shops
- Committing to providing key services as agreed with local community; this could be, a pharmacy, local farm shop, or even a bookstore
- Maximise service and entertainment over retail
- All residents to be within 5 minute walk of all basic needs

7.3. Developer role in delivering a One Planet Community

The developer has a key role to play in setting the vision of the project, but their importance extends throughout the project lifespan.

7.3.1. Outset – Setting the vision

At the outset		
Set the vision, Create a One Planet Action Plan	<ul style="list-style-type: none"> • Developer [D] create a sustainable neighbourhood plan: • Consider the lifecycle of the new settlement • Describe a vision of living, working and visiting • Establish targets, commitments and milestones 	D
Establish delivery mechanisms	<ul style="list-style-type: none"> • Link the design hardware and operational software • Establish long-term Community Stewardship Body [S] with One Planet Principles embedded in its constitution • Attract and secures right partners, tenants and supply chain 	D
Embed the vision	<ul style="list-style-type: none"> • Integrate vision and commitments in to delivery DNA, e.g. land sales, development agreements, design briefs, service agreements, leases, construction contracts, marketing and sales documents etc. 	D

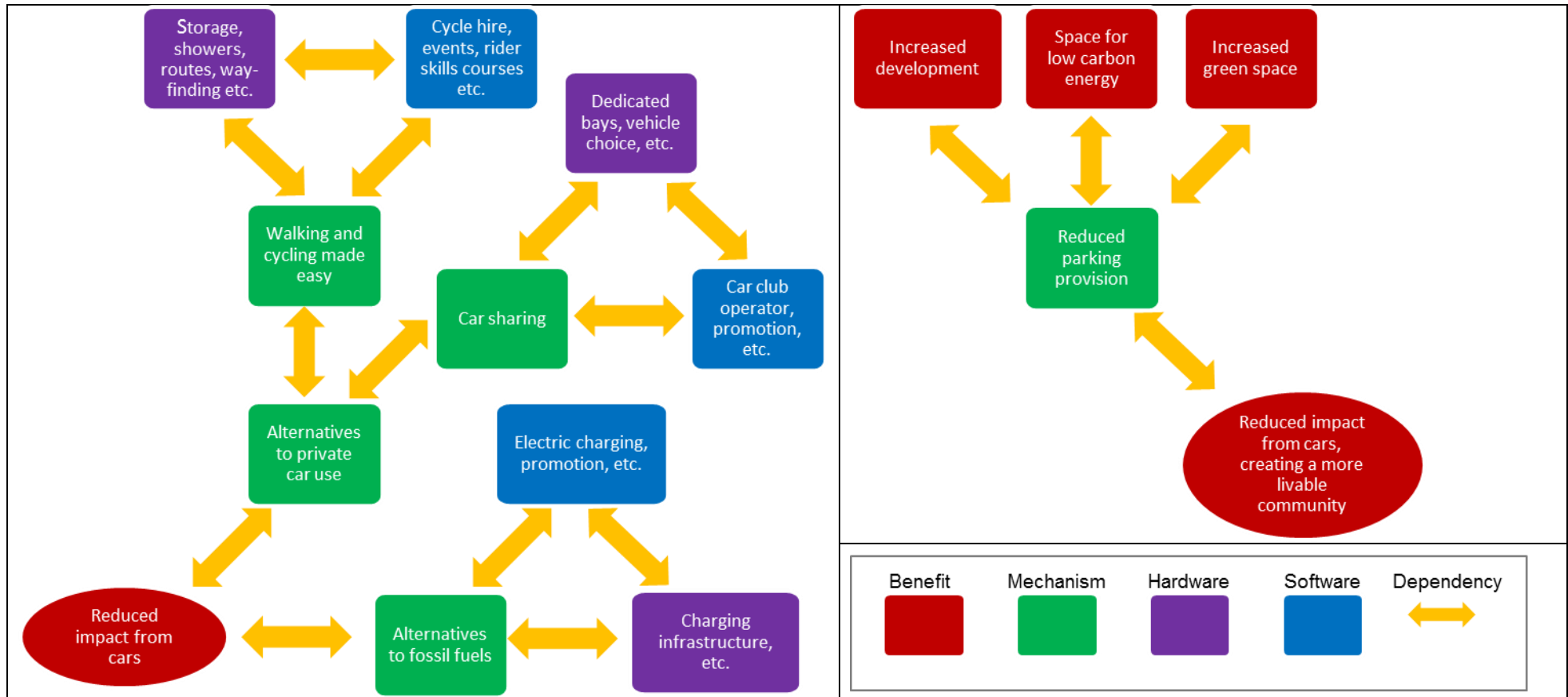
At the early stage of a project there can be a tendency to focus on design and infrastructure, but in designing a One Planet Community it is imperative to consider the operation phase from the outset. Success depends on an effective interaction between hardware and software.

Taking the example of sustainable transport, providing alternatives to private care use requires design and delivery and integration of both:

- Hardware (e.g. bays, facilities, signage etc.)
- Software (e.g. management, service provision, promotion etc.)

The benefits are also inter-connected.

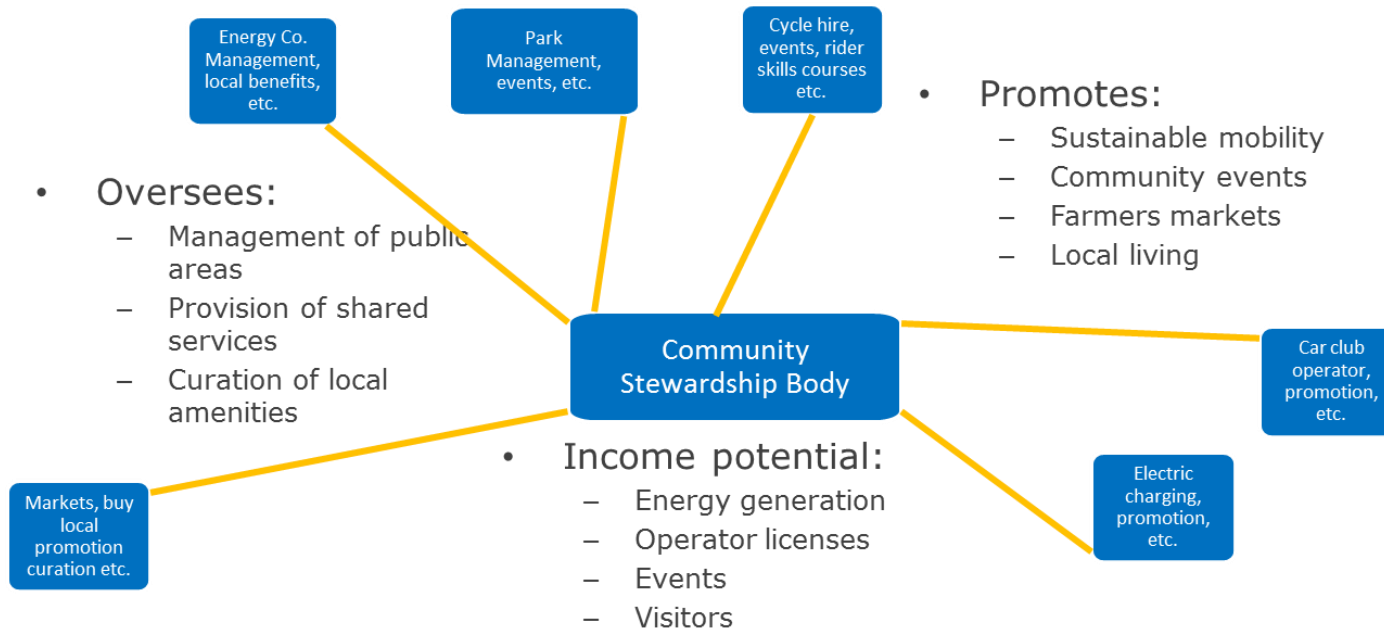
- Reducing space dedicated to cars releases space for:
 - Increasing mix of local amenities
 - Increasing resident population to support viability of local amenities
 - Provide open space for community energy park
- Benefits can further support sustainable living:
 - Pedestrian friendly streets
 - Increased access to local food
 - Changing purchasing habits



7.3.2. Delivery – coordination and oversight

In delivery		
Assures the vision	<ul style="list-style-type: none"> • Monitor and report on progress against own targets and relevant benchmarks • Establish monitoring strategy 	D
Delivering the vision	<ul style="list-style-type: none"> • Engage with partners and supply chain to ensure timely delivery • Promote/fund early critical elements, e.g. car share services, community facilities including park • Provide support to growing community in transition from development to occupancy phases • Mobilise long-term stewardship body 	D/S
Capturing learning for improvement	<ul style="list-style-type: none"> • Integrate learning loops in to lot / phase delivery and feed insights forward into subsequent stages 	D/S

The critical role of the Community Stewardship Body in linking together the various services onsite is shown in the diagram below. To maximise the opportunities of success the One Planet Principles should be integrated into its constitution.



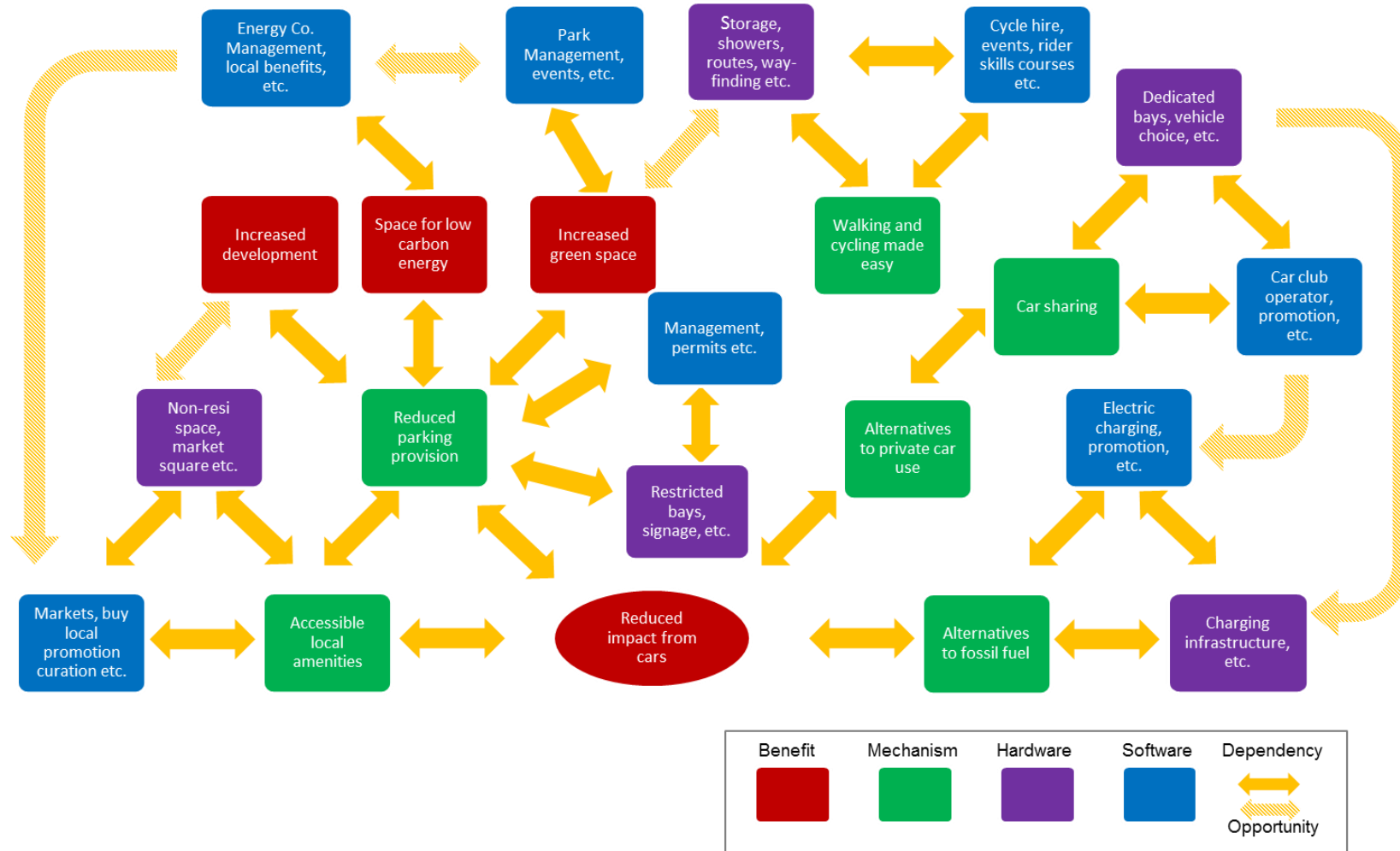
Key points for the developer and the stewardship body to consider are:

- How to maximise open space and guarantee access
- Funding streams for community buildings, e.g. through a community energy park (see case studies)
- How to provide restoration of area for ecological value and community amenity

7.3.3. Long-term management – monitoring and reporting

Long-term		
Assures the vision	<ul style="list-style-type: none"> • Monitor and report on progress of sustainable neighbourhood plan 	S
Delivering the vision	<ul style="list-style-type: none"> • Ongoing engagement with community to inform future management • Ensure sustainable neighbourhood plan is updated and maintained • Curate local amenities and facilities to ensure mix and vibrancy, in line with reducing need for cars • Manage and promote events and services, e.g. markets • Evolve services to adapt to future changes, e.g. climate, market conditions, demographic, technological etc. 	S
Capturing learning for improvement	<ul style="list-style-type: none"> • Integrate learning loops in to operation, management and redevelopment. Feed insights forward and to the industry more widely 	S

Ultimately this will help to create an interconnected and resilient community.

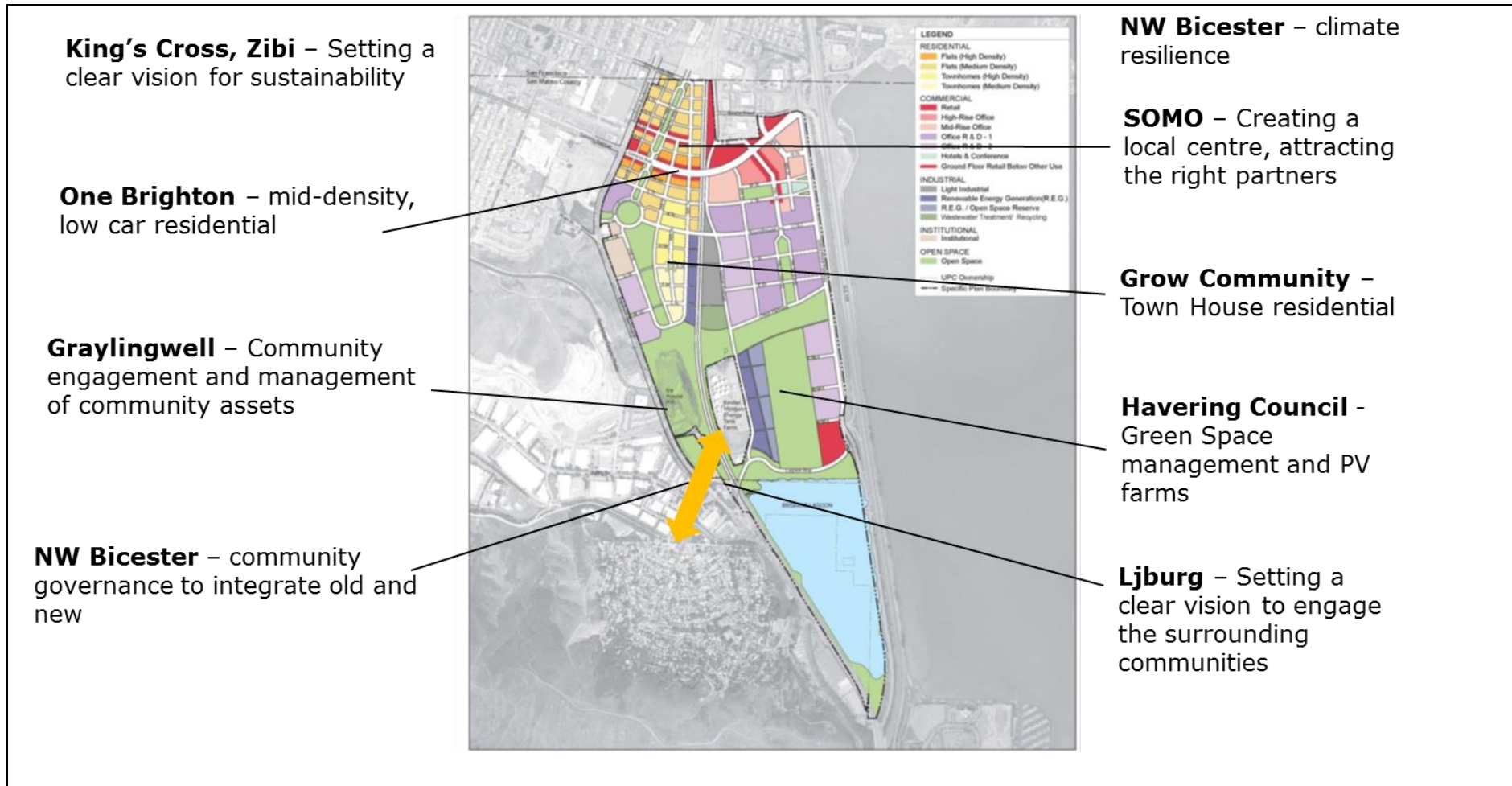


8. Case studies

While there are many factors critical to the success of the project, the experience of other successful sustainable developments suggests the following are of particular importance to the Baylands:

- Setting and driving the overarching vision to attract like minded partners
- Creating a unique and vibrant town centre destination
- Sustainable transport destination with significantly lower car ownership
- Facilitating services that create community and encourage sustainable living in both the new and existing community – specifically maximising access to open green space
- Resilience to change – economic changes, sea level rise, technological shifts

Examples of strategies employed on other projects to address these issues are shown in the case studies below.



8.1. Setting the Vision

8.1.1. Zibi – Ottawa

Clear vision and statement to be 'world-class sustainable community... combining urban and healthy-living principles with a vibrant waterfront'. Creating a destination where you can live for a month within a 1km radius if you wish...

Details

- 37 acres – town center location
- 60% residential, 20% retail, 20% commercial
- 75% of retail to be non-franchised
- One Planet Principles the 'DNA' of the masterplan
- Vibrant interactive 'Zibi Experience Centre'

Successes to date

- Multiple awards for masterplan, from Canadian Urban Institute, Canadian Institute of Planners, American Planning Association, International Society of City and Regional Planners
- Activated the site – events included Cirque du Soleil
- Online training in One Planet Living
- First Nation engagement creating employment opportunities



8.1.2. King's Cross redevelopment

Invested in early place-making to turn an undervalued area into destination

Details

- 2,000 homes, 3.4 m sqft of work space, 500,000 sqft of retail, 10 public squares, 26 acres of public space (40% of total site).
- 2006 to 2020 delivery programme

Successes to date

- 2001 strategy - "Principles for a Human City" - set DNA to create a lasting place for people
- Early investment in to public realm and curation of events to animate this space
- Attraction of key tenants to drive interest, vibrancy and value
- Public realm and placemaking have taken priority and resulted in turning a formerly derelict and undervalued area into a destination



8.2. Unique destinations

8.2.1. SOMO – Sonoma Mountain Village

Sustainable exemplar pioneering '5 – minute living' – all facilities within a 5 minute walk.
SOMO's clear and ongoing commitment to being a sustainable exemplar has attracted the commercial partners to bring the project to fruition

Details


- 200 acres, 142 of which developed
- Approx. 1700 dwellings planned – centered on market square, including a Zen Inspired Community
- 25 acre employment area
- 40 miles North of San Francisco – SMART Train

Successes to date

- Adaptive re-use of 600,000sf
- 40 businesses re-located to SOMO – 1000+ jobs – low vacancy rates
- Non-profit incubator
- Companies involved in: natural foods, advanced manufacturing, telecommunications, agriculture
- Businesses cite sustainability as factor in relocation
- Credo High School locating on site has adopted the One Planet Principles to become a One Planet School




8.2.2. Grow Community – Bainbridge Island, Seattle

Unlocking Health and Community	
<p>Details</p> <ul style="list-style-type: none"> • Community Centre development of 142 dwellings in 3 phases • 35 boat ride from Seattle • Phase 1, 23 town houses completed sold out on Facebook • Phase 2, in construction <p>Successes of phase 1</p> <ul style="list-style-type: none"> • Home Owners meetings getting 80% representation • Residents self-organizing into 'Integration Circles' • Broad mix of age demographics • 85% walking more and 80% using the community gardens • 75% report improved physical and mental health • Resident offered vehicle as 'community car share' 	

8.3. Low car development

8.3.1. One Brighton – Sussex, UK

Exemplar sustainable-lifestyles led urban mixed use development, with zero car parking	
<p>Details</p> <ul style="list-style-type: none"> • 172 apartments plus offices, community space and café in two multi-storey blocks next to Brighton’s main train station <p>Successes</p> <ul style="list-style-type: none"> • Zero private car parking, with promotion of local amenities, car share club and cycling facilities • Roof-top allotments and sky gardens as valuable outdoor spaces for communal resident use • Integrated renewable energy systems and EScO to deliver zero carbon energy • Community governance body and sustainable approach integrated in to leases and management services • Strong financial performance in midst of financial crisis 	

8.4. Facilitating and providing new services

8.4.1. Graylingwell – Sussex, UK

Community governance and development to drive long-term sustainability

Details

- 800 homes planned by 2020, approx. 50% built to date, with commercial and community spaces
- UK's largest carbon neutral development, on former hospital site in 85 acres of parkland

Community Development Trust established:

- Empowers people by developing skills and supporting projects that create local opportunities, employment and build community spirit
- Owns and manages community buildings and land, e.g. community gardens, planned orchards and enterprise studios
- Runs community programmes, manages sustainable travel plan, and employs 9 people



8.4.2. Ijburg – Amsterdam, Holland

Urban extension with easy access to nature – as part of and adding something new to city

Details


- 2009 onwards, with proposed population: 45,000 residents / 12,000 jobs (jobs/housing ratio: 0.6)
- 450 hectares site, with 100,000 sqm of office space, 30,000 sqm of services, retail outlets etc.

Successes to date


- Opposition to development in area of valuable ecology was met by developer's pledge to deliver a new model for sustainable urban living
- Engagement process to influence design, facilities and management
- Residents Associations and active and website aim to "create a unique Amsterdam neighbourhood with its own identity, a close-knit community where there is high social involvement among residents"



8.4.3. North West Bicester – Oxfordshire, UK

<p>'Community Governance' to integrate the new development with the existing town</p>	
<p>Eco-Bicester</p> <ul style="list-style-type: none"> • Incorporates Eco Town and projects in the existing town • Its mission is to promote energy reduction and sustainable transport to create a vibrant Bicester • Demonstration projects were delivered; new reuse and sustainability centre, Passivhaus demo house, travel behaviour programme, energy efficiency and climate change workshops, ZC extension to school <p>Community Governance</p> <ul style="list-style-type: none"> • Interim Management Board (IMB) before completion, made up of local residents and stakeholders • Development of Local Management Organisation (LMO) which will merge with IMB and be almost solely made up of resident and community representatives • Allows local people to directly make decisions on the management of community assets (green space, etc.) • Plays a key role in facilitating continued community involvement and engagement with new occupants • Helps to give 'new' developments a social character 	

8.4.4. Managing Green Space – innovation and opportunity

<p>Develop a clear strategy for managing the green space is required that includes:</p> <p>Objectives; Conservation, Public access, Health and well-being activities</p> <p>Potential funding options</p> <ul style="list-style-type: none"> • CSR or philanthropy for conservation • Covered by pay-for services – 'forest – park' • 'Ground rent' for onsite service, water or energy infrastructure <p>Management strategy</p> <ul style="list-style-type: none"> • Community involvement • Public private partnership 	<p>Case Study: Havering Council Solar Park:</p> <p>Derelict land to be used for PV farm</p> <p>Local community to benefit through:</p> <ul style="list-style-type: none"> • Investment opportunity • Some revenue feeds into a Community Fund to manage a local park • Derelict land cleaned up • Improved public access • Improved biodiversity habitat 	
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8.5. Resilience planning

8.5.1. North West Bicester – Oxfordshire, UK

'An exemplary and resilient One Planet Community'

Details

- Potentially 6,000 new homes, 393 home 'Exemplar' completed
- True Zero Carbon – only one of its size in the UK
- Modal shift target of 50% by non-car modes from a baseline of 67.5%

Successes of Exemplar phase

- All homes designed to cope with future temperature rise of up to 10°C
- 40% of the development is designated as green space and has a net-gain target for biodiversity
- All homes designed to be 400m from bus stops and 800m from school
- Dedicated Travel Plan Coordinator
- Bicycle stores in every home and the public realm
- Annual events such as Bicester Bike day
- Bike fixing workshops run by local social enterprise
- Brompton (folding bike) scheme available to residents
- First semi-rural car club in the UK – now in place
- Electric Vehicle trial scheme for all residents
- Community bus service up and running and well used



9. Potential Benefits

Bioregional developed a model of the different scenarios incorporating:

- Local expenditure data
- Carbon and ecological footprint data
- Economic data on health and wellbeing

The model allowed the impact on household expenditure and carbon footprint of different scenarios to be investigated. To give some examples:

- If a residential building is energy efficient spending on energy will fall
- In a car free development well served by public transport and cycling links then there is no need to own a car
- If a community provides communal services, through a communal tool-shed or resident lending platform, goods ownership may fall.

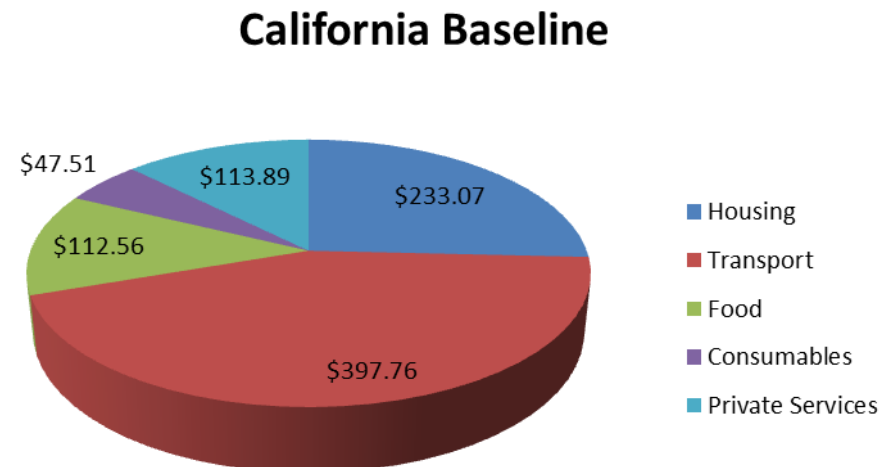
Household expenditure data was estimated from: Economic Perspectives - Discussion of Recent Economic Developments Publication 329, Volume XVI, Number 1 February 2010.

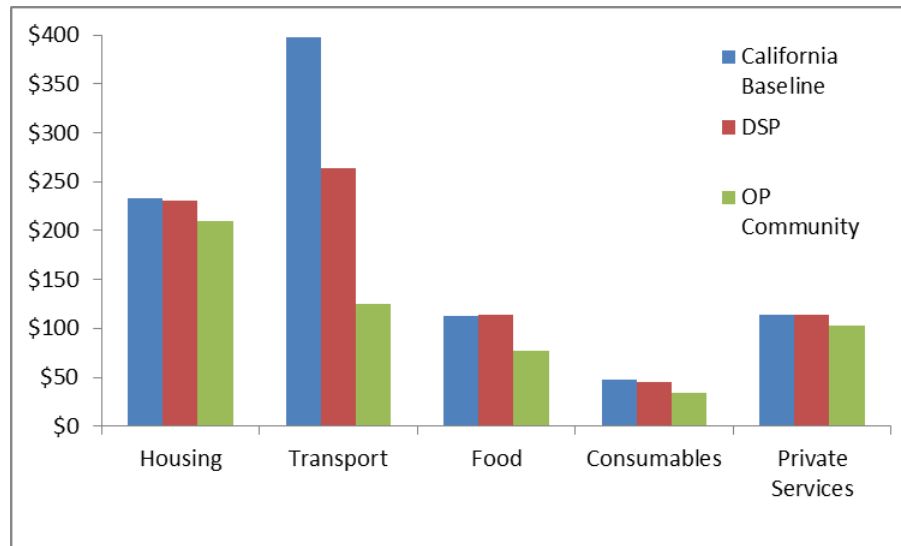
Ecological and Carbon Footprint data was available from:

- The Ecological Footprint and Biocapacity of California – by the Global Footprint Network December 2012. Produced for the U.S. Environmental Protection Agency.
- The Cool California carbon footprint website

9.1. Model outputs

In terms of expenditure the data showed that for the average resident of California over 40% of their expenditure was on transport.





This also provided the largest opportunity for saving. In the case of a One Planet Community where a resident can walk and cycle to fulfil all their daily needs their expenditure on transport can fall by close to 70% saving over \$250 per week.

Additional benefits include

- Improved air quality
- Improved access to local services
- Increased housing value
- Increased access to green open space

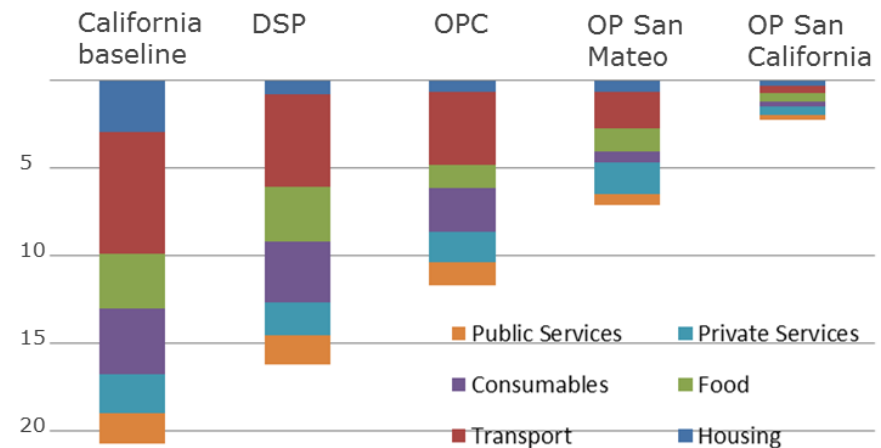
Carbon emissions fell by almost 50% in the One Planet scenario. Further reductions can be achieved by:

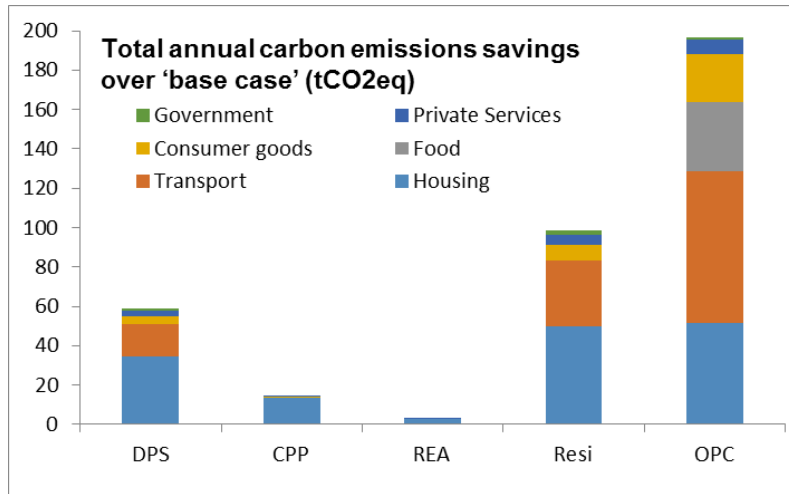
- Lifestyle changes; reducing flying, change in diet, further reduction in purchasing of goods
- Low impact provision of local services – One Planet San Mateo
- One Planet California to further lower the impact of services such as agriculture, state services and interstate transport

Analysis of the wider socio-economic benefits of a One Planet Community require more detailed research. Estimates have been made of the economic impact of loneliness, air quality and lack of physical activity. Assuming that they One Planet Community will reduce these impacts for all the new and existing residents we can estimate the potential benefit to the local economy. Potential benefits are:

- Reducing poor health from loneliness and air pollution would have an economic impact of around \$2.5mi saving/ year
- Local economic multiplier through local shops – the case of Sutton Community Farm shows a four-fold benefit.

Annual per capita carbon emissions under different scenarios





Finally an estimate was made of the carbon reduction of the different scenarios.

To do this the following steps were taken:

- a baseline carbon footprint for residents and workers was estimated
- the carbon footprint saving of individuals living or working at Baylands was estimated for each scenario – DSP, CPP, REA, Resi and OPC

To make a fair comparison in each case the impact of the same total number of residents and workers was calculated, and where they are not accommodated onsite they were assumed to have the carbon footprint of an average Californian.

As an example:

- the highest number of onsite residents is: 20,449 under Resi max.
- the highest number of employees onsite is: 15,627 (CPP).

Therefore for the DSP the following data was used:

- 9,888 residents onsite and 10,561 offsite
- 15,469 employees onsite and 157 offsite

Using the estimated carbon footprints of each scenario the total carbon emissions are 457 tonnes CO2 compared to 515 tonnes where there is no Baylands development and everyone is living offsite.

Undertaking the analysis in this way highlights the potential carbon benefits of developing at Baylands. What is striking in this case is the low carbon benefits of the REA scenario, as it misses the opportunities presented by developing the Baylands in such a way as to bring region-wide carbon savings .

9.2. Benefits summary

This analysis shows that:

- Development at Baylands can help to reduce California’s emissions
- The REA while having the lowest onsite impact, misses out on opportunities for offsite benefits
- A residentially led, zero carbon, sustainable transport orientated development – a ‘One Planet Community’ would have the largest benefit

10. Aspiration to Reality

How can the aspiration of a One Planet Community be realised at Baylands? One way forward would be the following:

- Set up a working group between the developer and the city
- Carry out a three-month process to agree in general what a One Planet Community would be which meets local, regional and planetary needs and wants, using this document as the starting point
- Look to maximise benefits for both the developer and the city
- Consider opportunities to use structures such as community land trusts, green bonds and local pension funds to maximise local benefits, particularly in the provision of social housing, but also to ensure good returns for the developer
- Demonstrate how closer cooperation between developers and cities using One Planet Principles can deliver better social, environmental and financial outcomes.