City of Brisbane
Agenda Report

To: City Council via City Manager

From: Stuart Schillinger, Deputy City Manager

Subject: Sustainability Document for the Baylands

Date: April 15, 2013

Purpose:

Ensure the development of the Baylands is carried out in a fashion which is on the leading edge of sustainability while at the same time financially viable given the constraints of the economy.

Recommendation:

Review the document presented by the Sustainability Committee.

Background:

On January 5, 2009 the City Council created a Sustainability Committee. The Committee currently consists of five members: two council members, one member each from Open Space and Ecology Committee, Planning Commission, and Parks and Recreation.

After reviewing various sustainability programs including One Planet Living the Committee chose to use the guidelines of One Planet as a base. One Planet Living guidelines was presented to the Community during the Brisbane University. It was used by Coddington Enterprises at Sonoma Mountain Village and received worldwide recognition during the Olympics as this was the first Sustainable Olympics using the One Planet Principles as their guideline.

The Committee met numerous times with Geoff Syphers (a consultant who has worked on One Planet projects including Sonoma Mountain Village) to develop the document. After the Committee completed its draft it requested feedback from City staff and incorporated their ideas into the document. On May 7th City Council requested feedback from the Planning Commission, Parks and Recreation Commission, and the Open Space and Ecology Committee. All three groups have met and discussed the draft. These comments were presented to the City Council at their August 22nd meeting. Council reviewed the comments and requested the Sustainability Committee incorporate their ideas into the document, as appropriate. The Committee has met and finished the draft of the first three aspects of the each of the 10 principles (Common International Targets, Context, and Summary Approach). The next phase of the process is to develop targets (or key performance indicators) for each of the 10 areas of the plan, then an action plan to reach the targets, and finally a method for measurement.

Discussion:

The ten One Planet Living principles and how the committee defined them are:

1. **Zero Carbon Buildings** – *All buildings will be energy efficient and will run completely from locally generated renewable energy.*

2. **Zero Waste** – *Resources are used efficiently, and ultimately zero waste is sent to a landfill. The "byproducts of consumption" should be the materials of tomorrow's uses.*

3. **Sustainable Transportation** – *The need to travel has been reduced, public transportation is easily accessible and low and zero carbon modes of transport are provided.*

4. **Local and Sustainable Materials** – *All goods and materials used for construction and property management are made from renewable, reclaimed, or recycled resources with low embodied energy and, wherever possible, sourced locally. As new technologies and methods present themselves, every effort will be made to implement these new products and practices.*

5. **Local and Sustainable Food** – *Healthy diets are promoted through local, seasonal, and organic produce, and that all food should be minimally processed and packaged.*

6. **Sustainable Water** –*Water is managed using best practice standards in water conservation, water efficiency, recycling and surface water management with an integrated system that achieves self-sufficiency, while enhancing wetlands with no damage to the surrounding water environment.*

7. **Open Space and Habitat** – *Provision for significant open space and open areas that enhance biological connectedness and habitat preservation.*

8. **Culture and Heritage** – *Embody a culture of sustainability, small-town community values, respect for local history, and a sense of place.*

9. **Economic Vitality with Equity and Ecology** – *A thriving, diverse and resilient economy that supports equity in employment, green business products and practices, socially responsible business behavior, locally-oriented business enterprises, and ecologically based measures of performance.*

10. **Health, Safety and Happiness** – *Create a future where is easy, attractive, and affordable for people to lead happy, safe, and healthy lives with a fair share of earth's resources.*

Each value has a COMMON INTERNATIONAL TARGET, CONTEXT, and SUMMARY APPROACH section. The common international target section places our values in the global context. The context section speaks specifically to the issues which are relevant for our specific project. The summary approach section discusses some of the approaches the project may use in achieving the overall vision.

Although the report has been reviewed by the United Paragon Corporation there has been no feedback from them concerning this document. Therefore, this document is a community created document with feedback from the various commissions and committees of the Council as well as the public who have provided feedback at meetings of the Council and directly to the Sustainability Committee.

The next step in the process is to develop specific measurable targets for the project, then the action plan as to how these targets would be achieved and finally the specific measurement methods which would be used. If we can get ourselves certified by BioRegional as a One Planet Project then BioRegional would assist the City in the measurement and provide independent reports concerning how the project was doing in achieving its goals.

The finished sustainability document will then assist the developer of the Baylands in determining the best method for building their development to achieve the goals set forth in the document. Some of the goals may be incorporated as part of mitigation measures required by the EIR, others may be placed in a Development and Disposition Agreement between the developer and the City.

Fiscal Impact:

There is no fiscal impact at this time. Depending on the final outcome of this process there may be an overall fiscal impact when the project is completed. However, defining that impact at this time is difficult. There will be positive financial impacts from having a sustainable development, although, given the current method of measuring economics, there may be some negative impacts based on the additional upfront costs of some of the requirements.

Measure of Success

The Baylands, upon completion, is considered to a world class development as it relates to sustainability principles.

Attachments:

Sustainability Goals for the Baylands draft for discussion – April 2013

Stuart Schillinger
Deputy City Manager

Clay Holstine
City Manager

SUSTAINABILITY GOALS FOR THE BAYLANDS
DRAFT FOR DISCUSSION

APRIL 2013

The citizens of Brisbane have widely expressed the importance of environmental responsibility and its application to the Brisbane Baylands project. In response, the City Council formed a Baylands Sustainability Committee to provide this guiding document, which is organized around the ten One Planet Living principles developed by BioRegional. In parallel with this effort, the project is also under review as part of the Environmental Impact Report (EIR), and this plan will be updated to reflect information coming out of that process when it is available.

The purpose of a Sustainability Action Plan is to create the blueprint for achieving sustainable results. It is aspirational and is not a contract for specific results, however it will inform the negotiation of binding criteria between the City and the Developer in a Development Agreement. This document will continually evolve over the course of the Baylands project to reflect new information, new funding mechanisms, new policies and technologies, and improvements to the project design, and thus it is termed a "living document."

With this draft, the City invites input from the public and the developer to make this plan effective and to create the strategies that will be used to achieve the sustainability goals articulated here.

The Sustainability Committee holds this vision for the project:

> *The Baylands presents an opportunity to create a development that begins to heal the land, contribute to prosperity that is fair and equitable, strengthen our relationship with nature, and enhance Brisbane's commitment to Community values. The core pillars of sustainability—environment, economics and social equity—will be woven into every building, park and transportation mode, creating a balanced approach to development that will be safe, engaging, and within the means of the Earth's resources.*

BACKGROUND

To achieve our sustainability goals, the Sustainability Committee investigated the use of four different sustainable development programs[1][2][3][4] and chose to use the framework of the One Planet Communities program and adapt it to this particular project. The framework is a set of ten principles designed around achieving a one-planet ecological footprint, and includes the social and economic aspects of sustainability as essential elements to achieving and sustaining the environmental outcomes. BioRegional's One Planet Community projects have received worldwide acclaim for their ingenuity in design, thoughtfulness towards local issues, and understanding the importance of harmony between development and nature – they recently teamed up with the city of London to create the first "One Planet Olympics."

1. **Zero Carbon Buildings** -- Making buildings more energy efficient and delivering all energy with renewable technologies.
2. **Zero Waste** -- Reducing waste, reusing where possible, and ultimately sending zero waste to landfills.
3. **Sustainable Transportation** -- Using low carbon modes of transport to reduce emissions and reducing the need to travel with good planning.
4. **Local and Sustainable Materials** -- Using sustainable healthy products, with low embodied energy, sourced locally, made from renewable or waste resources.
5. **Local and Sustainable Food** -- Choosing low impact, local, seasonal and organic diets and reducing food waste.
6. **Sustainable Water** -- Using water more efficiently in buildings and in the products we buy, and addressing local flooding, as well as wetland and stormwater pollution.
7. **Open Space and Habitat** -- Protecting and restoring biodiversity and natural habitats through appropriate land use and integration into the built environment.
8. **Culture and Heritage** -- Reviving local identity and wisdom; supporting and participating in the arts.
9. **Economic Vitality with Equity and Ecology** -- Creating ecologically-based economies that support equity and inclusive communities.
10. **Health, Safety and Happiness** -- Encouraging active, safe, meaningful lives to promote good health and well-being.

The use of the ecological footprint is significant because it departs from green building programs by measuring real impacts. A new building that is 50% more energy efficient than allowed by code may be recognized as extremely green, but if it runs on fossil fuels then it still increases global emissions and harms the climate. Real impacts matter, and the ecological footprint is a good tool for evaluating them.

The ecological footprint, developed by the Global Footprint Network, measures how much land and water area a human population requires to produce the resources it consumes and to absorb its carbon dioxide emissions. The tool has been in use since 1990. If the global

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1 The U.S. Green Building Council's Leadership in Energy and Environmental Design for Neighborhood Developments (LEED-ND)
2 The International Living Future Institute's Living Building Challenge
3 BioRegional's One Planet Communities program
4 The International EcoCity Framework and Standards

population lived the lifestyle of the average American, we would need about 5 planet Earths to support us, according to the Global Footprint Network.

The ecological footprint is used as the underlying metric for physical sustainability within the One Planet Communities program. The goal is to set criteria that will ensure the Baylands development is truly sustainable, and that if everyone in the world modeled themselves after what these principles propose for the Baylands, the Earth would have a one-planet ecological footprint.

With this draft Sustainability Action Plan, the Sustainability Committee shares its research into the Local Context of the project and provides a Summary Approach to achieving sustainability. We now, all of us, have the task of creating two more sections for each principle: the Key Performance Indicators and the Detailed Plan.

Key Performance Indicators are the metrics by which we will track the Baylands' progress toward sustainability. Good indicators are simple, easy to use and explain, and strongly linked to the sustainability goals. They are not intended to measure all impacts, but rather to "indicate" progress on the most important aspects, and many projects use just one or two for each principle.

The **Detailed Plan** is the set of actions and policies which will be taken to achieve the sustainability goals, and is the part of the Sustainability Action Plan that evolves over time as we learn, as policy changes, as new technologies are developed and applied.

The One Planet Living Sustainability Action Plan could apply to any of the proposed plans for the Baylands, and is not tied to the Developer-Sponsored Project, the Community Alternative Project, or the Renewable Energy Alternative Project. The Sustainability Goals for the Baylands should be applied not only to the operational stage of the completed project, but also to the construction phase. Issues of energy, waste, water, health and safety must be taken into consideration throughout the life cycle of the Baylands development.

1. ZERO CARBON BUILDINGS

Our vision for the Baylands is that all buildings will be energy efficient and will run completely from locally generated renewable energy.

COMMON INTERNATIONAL TARGETS

All buildings are designed to be energy efficient to country-specific best practice standards, including passive and active elements, and will be served by 100% renewable energy.

Renewable energy will be generated on site with solar, wind, geothermal and biomass. If needed, off-site local renewable energy capacity will be used. Financial reserves will be established to fund future maintenance and replacements of all renewable energy systems so that they are a permanent asset.

CONTEXT

Assembly Bill 32, California's comprehensive climate change legislation, requires the State to reduce greenhouse gas emissions (GHG) to 1990 levels by 2020 - a reduction of about 25%, and then to reach 80% below 1990 levels by 2050. If all the world's countries were to achieve these objectives, it is estimated that global temperatures would increase about 2°C (3.6 degrees Fahrenheit) for the 21st century, avoiding the effects of the 6°C (10.8 degrees Fahrenheit) rise predicted for our present course. This magnitude of climate change is predicted to cause major increases in the frequency and severity of extreme weather, significant loss of food capacity on land and in the oceans, and substantial sea level rise. In addition, for California, it is predicted to result in many more fires and increasing water insecurity.

Currently in the United States about 45% of GHG emissions are associated with constructing and operating buildings. Consequently, reducing the carbon footprint of buildings makes a major contribution toward the reduction of GHG emissions and therefore the extent of climate change.

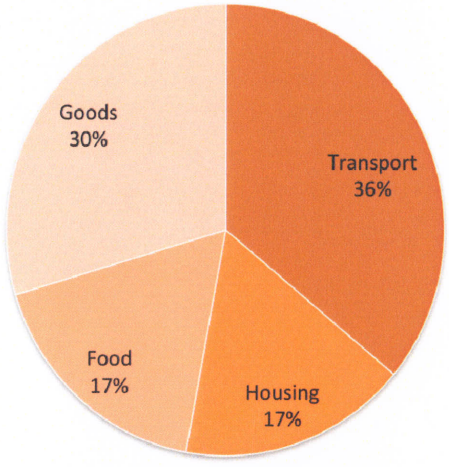

FIGURE 1. 2010 CALIFORNIA AVERAGE INDIVIDUAL GHG EMISSIONS OF 17.7 TONS/YR (SOURCE: CARB)

Average greenhouse gas emissions per person per year in California is 17.7 tons, with a significant fraction of that footprint affected by how we plan, construct and operate our

neighborhoods. Transportation and housing make up the majority of our California carbon footprint—two categories directly impacted by development. How and where we shop and eat are strongly influenced by development patterns as well.

New development has a special obligation to go beyond the AB32 goals because it is less expensive to avoid emissions through constructing efficient, renewably powered buildings than it is to reduce emissions through retrofitting existing buildings.

The State of California's mandatory green building code, CAL Green, contains two optional tiers for performance above the minimum standard. The current Tier 2 requirement is that buildings use 30% less energy than allowed by code. The energy code is expected to get significantly more stringent with the adoption of each update.

The State of California's energy code, Title 24 Part 6, requires that all buildings be constructed "Net Zero Energy" beginning in 2020 for homes and 2030 for nonresidential buildings. A number of "Energy Plus" or "Energy Positive" buildings are being tested around the world, including some larger commercial projects, such as in Freiburg, Germany. An advanced energy plan will be studied in the EIR and in a National Renewable Energy Laboratory study to determine feasibility and compatibility with overall sustainability objectives.



FIGURE 2. FOUR AND FIVE-STORY BUILDINGS CAN NOW PRODUCE MORE ENERGY THAN THEY USE, FREIBURG, GERMANY

There are many examples of innovative local power systems that reach beyond traditional solar and wind. Hummingbird Energy and Arizona State University have signed a Letter of Intent to build a 2.4 MW urban biomass facility on the ASU campus at Tempe—the first of its kind in North America. The City of San Antonio converts their human waste into energy, while San Francisco converts its dog waste into alternative energy by ingesting the dog feces into a methane digester.

Although the U.S. Treasury Grant for renewables expired at the end of 2011, significant incentives for renewable power are still available in California, and the cost of solar power continues to drop rapidly with increasing competition from Chinese producers and advances in technology.

SUMMARY APPROACH

Building design in the Baylands will emphasize passive reductions in energy loads first. Daylighting will be used throughout, as well as strategies to reduce heating and cooling loads like proper orientation, insulation, and glazing selection. In some buildings, air filtration systems and passive ventilation should be used.

After minimizing loads through passive design, rigorous energy efficiency measures will be used to reduce loads further. Buildings in the Baylands will be designed to meet California's CAL Green Tier 2 prevailing requirements for energy efficiency. In addition, an on-going operations and maintenance program will be implemented to monitor building energy performance in line with best practices in retrocommissioning.

Finally, all energy for space conditioning, ventilation, water heating, lighting and plug loads will be generated on site from solar on buildings, from an on-site solar farm, and possibly from wind, heat exchange technologies, and biomass. The project will be designed to produce its entire annual energy needs, meaning that it will likely produce more than it uses in the summer, feeding power to the nearby community. Loads separate from these categories, such as industrial process loads, will also be met with on-site renewable energy sources if they are electric. For industrial loads using natural gas, a plan will be created to convert to a renewable fuel over time.

As proposed by the OS&E Committee in their Guidelines for the Baylands, Brisbane is committed to achieving energy neutrality for the entire development. Furthermore, the Committee recommended in its February 2011 Update to its Scoping Comments: "Consideration should be given to whether the Baylands has the potential to generate renewable energy beyond the project's needs, so that the Brisbane community could reduce its reliance on energy generated by fossil fuels." A thorough analysis of best practices for generating alternative energy will be evaluated to determine appropriate types and locations. Converting waste into energy should be studied.

In collaboration with Principle 6 Sustainable Water, opportunities should be explored to capture wastewater heat or otherwise convert waste from the sewage system into an alternative energy source.

2. ZERO WASTE

Our vision for the Baylands is of a future where resources are used efficiently, and ultimately zero waste is sent to a landfill. The "byproducts of consumption" should be the materials of tomorrow's uses.

COMMON INTERNATIONAL TARGETS

The less waste that is generated in the first place, the less there is to deal with. Best practice standards in waste minimization during construction should be employed, and a clear set of time-specific targets should be established in order to achieve an ultimate zero waste outcome. The project must demonstrate a rapid, verified progress toward the zero waste target, especially given current rapid advances in the introduction of waste processing globally.

At least 70% of baseline waste by weight generated within the development should be reclaimed, composted or recycled, and no more than 2% should be sent to a landfill.

CONTEXT

Through AB 939 California has mandated an ultimate goal of zero waste to landfills. Diversion rate targets were included in this legislation, and all cities have to report their progress toward these targets.

Brisbane's solid waste is collected by South San Francisco Scavenger Company. The City has curbside pick-up for recyclables and some greenwaste, but does not currently have food waste collection. The current franchise agreement for the City of Brisbane waste hauling expires in 2013. San Francisco's waste management provider, Recology, has its recycling operation located in the Baylands. Plans are being implemented to expand this operation at the Baylands in order to achieve San Francisco's "Zero Waste" mandate.

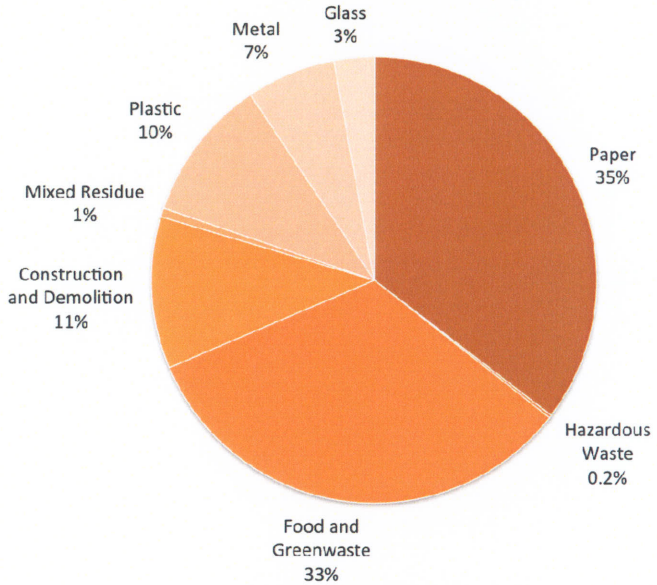

FIGURE 3. 2010 CALIFORNIA AVERAGE NONRESIDENTIAL WASTE STREAM (SOURCE: CALRECYCLE)

In cooperation with its Scavenger Company, Brisbane has been meeting its targets through collection of recyclables, though residents have been doing better than businesses. Brisbane has a Construction and Demolition Debris Ordinance that mandates recycling targets for materials generated from construction and demolition projects. The building department provides information on how to meet these targets and where to take materials for recycling.

Many cities throughout the Bay Area are instituting laws that prohibit the use of packaging material that is not easily biodegradable or reusable, and requiring merchants to deliver their products in containers that are less harmful to the environment. The City of Brisbane is participating in the County's planning process to adopt a single use bag ban.

Conversion technologies in California have typically involved the use of incineration, which have been and continue to be strongly opposed because of the air quality concerns. By a vote of its citizens, Brisbane denied a waste incineration plant project in the Baylands in the early 1980s. Recent advances in gasification and plasma pyrolysis could provide a clean way to reduce the volume of solid waste from the Baylands while generating energy.

SUMMARY APPROACH

Achieving Zero Waste will require strong and committed action in policy, infrastructure, and individual action. Provision must be made to manage waste materials brought onto the site from outside. Through education and recruitment of appropriate businesses, we will encourage zero-waste practices and the sale of recycled content and easily-recycled or composted products on site. Provision for handling, storing, and processing materials will be closely coordinated with the local agencies responsible for such work to improve diversion rates.

Since California already has strong legislative commitments to move toward zero waste, the challenge is to get cooperation from waste-makers, especially businesses. San Francisco, Palo Alto, and Alameda County have strong zero waste programs, which will be studied to create the detailed Baylands Zero Waste Plan.

With San Francisco adopting an ambitious "Zero Waste" mandate, it has looked to its current waste management provider to implement its waste diversion goals. The Baylands development should look for opportunities to use advanced waste reduction practices, from simple ideas like adding food waste collection and a local toxics drop-off center, to more sophisticated ideas like vacuum tubes to connect buildings directly with a collection facility, thereby reducing truck traffic.

Public and private sector, as well as individual commitment, creativity and action will be needed to develop and maintain sustainable programs to reduce, reuse and recycle all materials generated on site. An ongoing educational focus to create a culture of efficiency and understanding of the life cycle of products should be the mantra for engagement in the Baylands.

The project developers and occupants will work with the City of Brisbane to support standards and policies that create a more environmentally responsible approach to packaging and containers used in the supply chain and by consumers.

3. SUSTAINABLE TRANSPORTATION

Our Baylands vision is one where the need to travel has been reduced, public transportation is easily accessible, and low and zero carbon modes of transport are provided. Brisbane creates a green transport plan that results in carbon emission reductions that are consistent with the targets of the State of California and Brisbane's energy strategy.

COMMON INTERNATIONAL TARGETS

The ecological footprint arising from transport has to be consistent with the overall target of achieving a one-planet footprint from all impacts. BioRegional considers transport targets on a case-by-case basis. Projects need to demonstrate low and improving rates of carbon emissions from transport within as well as into and out of the project area.

CONTEXT

The site is located between the two major regional employment centers of San Francisco and Silicon Valley. It sits just to the west of Highway 101 and the CalTrain commuter rail line bisects the property today.

San Mateo County has an auto-dominated transportation system, but there are many potential options for improving transit and ridership in the area. The county currently has infrequent bus service, limited car share programs and only limited success with existing rideshare commuting. However, it also has basic passenger rail service, well-used park-and-ride lots in several locations including at Old County Road in Brisbane, and paratransit services for the elderly and disabled.

A free shuttle service linking Brisbane with the Balboa Park BART station in San Francisco provides a transportation alternative for citizens working along the BART corridor and in Brisbane, and San Francisco's Muni Third Street rail line terminates near the north end of the Baylands project at Geneva Avenue. The City offers a free shuttle service from central Brisbane to the CalTrain station. A study is underway to determine the best location for the Bayshore CalTrain station, and it could conceivably serve as a transit hub with San Francisco Muni buses running east/west on the extension of Geneva Avenue and SamTrans buses running north/south. San Francisco is also considering the extension of its Third Street light rail line to this same transit hub. However, these plans are very expensive, and CalTrain itself is in financial difficulty.

California has a law (SB 375) that encourages development around transit hubs. As part of the implementation of this law, regional transportation funding agencies will prioritize projects that have approved transit hubs.

In 2008, California voters passed Proposition 1A to link the major cities of California by high-speed rail. The Baylands has been considered as a possible site for a railyard for the high-speed rail line.

Bicycle routes are available, but are limited. There are no existing community bicycle sharing programs such as those in New York and Washington DC. Such programs are currently under study by various Bay Area communities.

Brisbane does not have a gas station.

Brisbane's Baylands area is part of a regional Priority Development Area (PDA) that also encompasses the Schlage Lock housing development site in San Francisco, Executive Park, Candlestick and Hunter's Point. Schlage Lock and the Baylands are projects of the same company, Universal Paragon Corporation.

SUMMARY APPROACH

A comprehensive transportation study will be completed during the course of the EIR study. While we have identified some preliminary approaches in this Sustainability Action Plan, we fully expect to modify and improve our approach to transportation as a result of this comprehensive study. At a minimum, we will look for ways to set appropriate targets for vehicle miles travelled, greenhouse gas emissions, and level of service for traffic.

We will reduce emissions from transportation first by reducing the *need* to move long distances and also by reducing the need for fossil fuel based modes. We will create an easy pedestrian and bicycle lifestyle, where the location of jobs, restaurants, retail, services and recreation are in close proximity to each other. If housing is allowed, it will be incorporated into this web of mutual efficiency.

For public transportation to be a significant part of the Baylands, it needs to be easily accessible from all parts of the development and tied together by a variety of transportation modes.

The multi-modal station is the heart of the development. To fully utilize the potential of the multi-modal station, a minimum of a ¼ mile radius of combined uses must surround the station. This may require relocating the station to a point south of its currently planned site, and integrated into the Geneva Avenue extension—a prospect that is currently being studied.

It will be important to establish strong lines of communication with the various transportation authorities such as SamTrans, CalTrain, Muni and the various private companies. We will assert our desire that all public transportation be electric driven with renewable sources or use low- or zero-carbon alternative forms of fuel.

We will work with San Francisco to connect transit systems that further the city's program goals of sustainability for this project.

The Project will provide infrastructure to support a low-carbon transportation system with alternative fuel filling stations, electric car charging, plug-in hybrid carshare programs, minimal parking areas, shared parking between uses and a successful rideshare program.

An elaborate bicycle and walking path system will be incorporated throughout the Baylands, providing opportunities for exercise, passive and commuter bicycle use. Class 1 and Class 2 bicycle paths will be constructed.

We will support the creation of a bicycle sharing system that will provide free bicycles for anyone in the Baylands. To reduce theft and vandalism, we will incorporate programs that have been initiated in other parts of the country as well as in Europe and Asia. The program will be subsidized through business programs and advertising.

The current free shuttle route connecting Brisbane with the Balboa Park BART station will be expanded to include the Baylands.

A free shuttle system such as the Emery-Go-Round in Emeryville will be explored.

4. LOCAL AND SUSTAINABLE MATERIALS

Our Baylands vision is one where all goods and materials used for construction and property management are made from renewable, reclaimed, or recycled resources with low embodied energy and, wherever possible, sourced locally. As new technologies and methods present themselves, every effort will be made to implement these new products and practices.

COMMON INTERNATIONAL TARGETS

Via the common process guidelines at the One Planet Communities website, country-specific targets should be determined to increase and optimize the use of local, reclaimed, renewable, recycled, durable, healthy and low environmental impact materials for construction and property management.

CONTEXT

National protocols for sustainable materials are rapidly developing. Examples include wood from FSC-certified forests, products that are free of formaldehyde and volatile organic compounds, products made without the use of toxic chemicals, materials that are produced with low amounts of energy, especially fossil fuel based energy, etc. Attention is increasingly being dedicated to making buildings and products more easily recyclable at the end of their useful lifetime.

Brisbane was one of the first cities in California to adopt a green building ordinance.

Though mostly undeveloped, the Baylands does have a few existing building sites—one is occupied by Sierra Point Lumber, which has expressed interest in relocating to another area of the Baylands, while San Francisco's waste management company, Recology, conducts their recycling operation in the Baylands, but has plans to expand their program with buildings that will be LEED Platinum.

A large portion of the Baylands is currently being used for recycling concrete, aggregate, soil and rocks.

With the rapid growth in popularity of LEED, a national protocol on sustainable materials is emerging. The focus is two-fold: look towards using materials that are reclaimed, locally sourced, locally manufactured, containing wood from FSC-certified forests, and containing recycled content, while discouraging the use of materials that are harmful to the environment and human health.

While the LEED standard of 2013 is excellent, it has some notable gaps which are widely recognized. Specifically, it does not recognize the benefit of avoiding the use of materials (e.g.,

finished concrete flooring rather than carpet), it does not give credit for avoiding materials that require toxic cleaning compounds, it does not restrict materials to those which are known to have little or no toxicity (e.g., per the REACH protocols), it does not restrict the use of materials which have toxic production byproducts (e.g., dioxin from PVC manufacturing), it does not give credit for the use of materials which are fully recyclable at end-of-life or for materials with product take-back programs.

The Alameda County-based Stopwaste.Org has established standard jobsite waste recycling practices and guidelines (e.g., CSI 01505) and is an excellent regional resource for information about waste reduction.

SUMMARY APPROACH

Use LEED Platinum standards for the project baseline material practices and add other criteria as they become practical.

Since the Baylands will be built-out over the course of several decades, a process will be established that ensures the increasing use of local and sustainable materials as the opportunities become available. As much fabrication as possible should be done on site, and materials already available on site (e.g., clay, concrete, asphalt, mulch, topsoil, trees, etc.), should be used to the extent this can be done safely.

Work with a sustainable materials consultant to identify buildings and developments throughout the world that have created innovative structures with the use of sustainable materials. Use this information to form the basis of a comprehensive approach to materials, and establish protocols for sustainable materials in construction and property management. In addition, establish guidelines for sustainable materials in consumer goods and packaging, in the home and workplace to help educate people who work at the Baylands or who visit there.

Use Life Cycle Assessment (LCA) for selecting materials and making process decisions in the construction and maintenance of buildings and infrastructure. LCA involves calculating the total environmental costs of any construction or production process from its beginning in raw material extraction to its completion in the disposal of building or product components. For recycled materials such as simple metals, the analysis looks at the costs from extraction through production, use and the eventual recycling and remanufacturing of new materials. The ultimate objective is to bring the construction, production, product and building management cycles within the biological capacity of the earth.

5. LOCAL AND SUSTAINABLE FOOD

Our Baylands vision is one where healthy diets are promoted through local, seasonal, and organic produce, and that all food should be minimally processed and packaged.

COMMON INTERNATIONAL TARGETS

Healthy diets should be promoted and minimum targets achieved for supply of organic or low environmental impact food and local sourcing.

Sustainable agriculture involves food production methods that provide safe working conditions, do not degrade the environment, are humane to animals, support farming communities, and produce healthy food.

One Planet Communities throughout the world will develop strategies to enable and encourage people to adopt a One Planet diet, through education and agreements with onsite retailers and caterers.

Onsite facilities, including retail and catering facilities, will strive to minimize packaging in line with zero waste targets, and minimize consumption of processed foods which have a large ecological footprint. Food waste from all residents, tenants, businesses, restaurants and shops will be minimized.

Food growing will be integrated onsite where appropriate. Strategies will be put in place to enable food growing on site. Local food mapping will be undertaken and partnerships will be developed with local producers to establish regular supplies and to work with them to further reduce their impacts.

Purchasing systems will be established to ensure food provided does not contribute to deforestation, over-fishing or pollution and minimizes other negative impacts.

CONTEXT

We have existing national organic standards and a more stringent set of California organic standards. For products coming from areas with poor working conditions, such as coffee, tea, sugar, chocolate, vanilla and fresh fruit, the Fair Trade Certified™ program is an effective labeling system for promoting good practices in the international food industry and is widely used in local stores.

A number of organic farms exist in San Mateo County and the surrounding region. Consequently, seasonal organic produce should be readily available. Over the past twenty years,

farmers' markets featuring local foods have become widespread and popular in California, and the desire to eat local food is steadily increasing.

No "food miles" standards have been established in California, but there are restaurants advertising that none of their ingredients come from more than 100 miles away. Google (headquartered in Santa Clara County) has Cafe 150 that claims its food ingredients come from within 150 miles.

The U.S. Department of Agriculture estimates that food production and distribution use 15% of all energy in the United States and contributes an equal share of air pollution and greenhouse gases. However, the emissions impact of food is complex and involves much more than transportation. Figure 4 shows how the greenhouse gas emissions related to food breakdown, making it clear that other objectives like reducing the use of petroleum fertilizers and reducing food waste in grocery stores and restaurants are also very important.

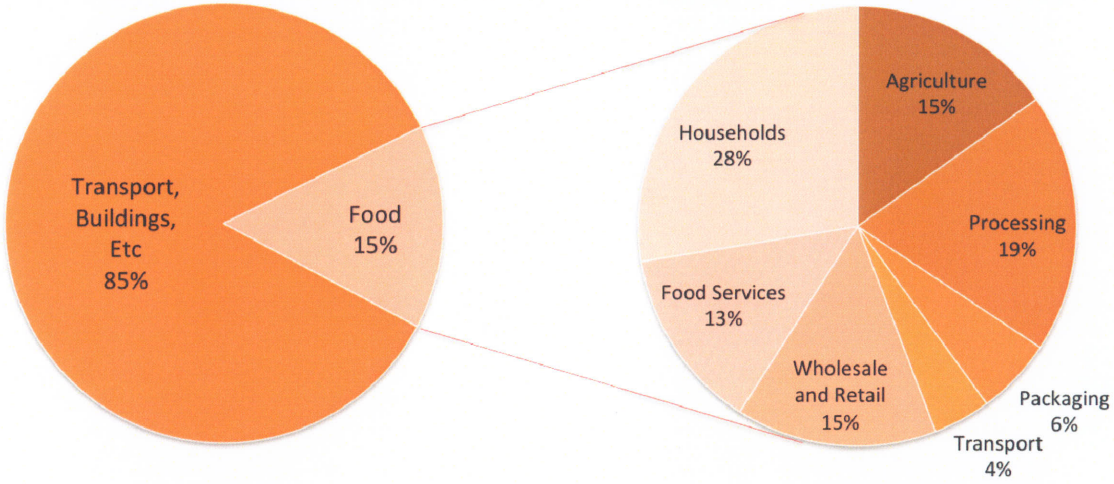

FIGURE 4. BREAKDOWN OF ENERGY AND EMISSIONS IN THE U.S. FOOD INDUSTRY[5]

Local counties are home to dozens of organizations, farms and programs dedicated to healthy local and organic food. Within a 200 mile radius, one will find some of the highest quality food sources in the world: seafood from the Pacific Ocean, grasslands supporting cereals, dairies and beef, fertile soil supporting fruits and vegetables and much more.

There are also national and State standards for healthy diets that many restaurants highlight in their menus. California is a leader in this movement.

Portions of the Baylands are not suitable to in-ground gardening or farming because of soil contamination, but engineered raised gardens can be studied and perhaps found feasible.

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5 Patrick Canning, et al, "Energy Use in the U.S. Food System," USDA Research Report Number 94, March 2010.

SUMMARY APPROACH

Brisbane will set standards and incentives for local, sustainable and affordable food in the restaurants and food markets that will be established in the Baylands. When a viable commercial level is reached, a farmers' market featuring locally grown foods will be established.

Promote healthy diets high in local seasonal, organic and low-environmental impact foods.

A significant proportion of food should be locally sourced from low environmental impact farming with reduced packaging from a radius of 50-100 miles from the center of the site. Given the importance of food to ecological footprints, stretching targets are essential to achieving a one-planet footprint.

Key Performance Indicators should be set for certified organic and Fair Trade food.

Several techniques will be considered to increase consumption of locally-produced and low-impact food including fruit trees on site on both public and private land, a year-round farmer's market, and strong incentives in lease agreements for grocers and restaurants to source local, organic, fair trade and low-impact foods.

Brisbane already has a community garden for residents. Another could be established in the Baylands, taking great care to use techniques that protect against introducing soil contaminants into foods (e.g., raised beds with imported soil). The feasibility of urban farming should be investigated and pursued.* Ice House Hill and the adjacent "corral" provide an opportunity to create a highly productive and diversified urban farm. Not only could this area provide a great source of produce, honey and eggs to the community, it could help reestablish our agricultural roots with the land. An effort will be made to consult with local farmers who specialize in high yield, low impact farming, including the best methods for minimizing irrigation water. The farm may be established in partnership with a local school or a community-supported agriculture (CSA) farmer.

Research the potential for aquaponics, a sustainable food production system that combines traditional aquaculture (raising aquatic animals such as fish in tanks) with hydroponics (cultivating plants in water) in a symbiotic environment.

Work with San Mateo County's Health System to conduct community workshops on healthy eating practices, and establish healthy guidelines for restaurants. Create public events and outreach, such as a possible annual "Sustainable Food Fair" to promote local and healthy food.

Restaurants and stores will be required to use re-usable or compostable containers for to-go food, and to develop methods to reduce food waste.

* Habitat should be taken into consideration when evaluating urban farming.

6. SUSTAINABLE WATER

Our Baylands vision is that we manage water using best practice standards in water conservation, water efficiency, recycling and surface water management with an integrated system that achieves self-sufficiency, while enhancing wetlands with no damage to the surrounding water environment.

COMMON INTERNATIONAL TARGETS

Water efficiency and recycling must be promoted in line with country-specific best practice.

All facilities must provide access to safe potable water. Projects in areas of flood risk and sea-level rise should have an acceptable 100-year flood risk strategy.

CONTEXT

The Baylands is adjacent to the San Francisco Bay and most of it was historically part of the Bay. These low-lying areas are subject to flooding and damage from future sea-level rise. The proximity with the Bay is also of importance when considering the impacts of runoff from a site containing contaminated soil.

Brisbane receives its water and wastewater treatment services from the San Francisco Public Utilities Commission. There is currently no water allocated from the SFPUC for the Baylands project, although a framework for future negotiations with the Oakdale Irrigation District for a potential water transfer agreement has been approved by City Council.

Water efficiency and recycling are top priorities. Because of the scarcity of fresh water, the recycling of wastewater and storm water is essential. The most effective means of achieving these targets is with an integrated system built-in to a new development. Wetlands can be incorporated into the waste and stormwater processing system.

The collection of rainwater is a practice encouraged by the City of Brisbane, though it is only allowed under federal law in certain narrow instances.

Water security in drought years is an issue throughout the Western U.S. Some arid areas of the county, such as Orange County in Southern California, treat wastewater using a reverse osmosis process, which produces drinking water. The standards to purify this water exceed all U.S. standards.

Organizations such as the Greywater Alliance are leading the effort to educate Bay Area local agencies and the public about the reuse of greywater as an integral part of water conservation.

Legislative efforts are underway to expand the allowed use of greywater to single family homes and businesses, making safety controls achievable as in Arizona or New Mexico.

The cost of water has risen dramatically over the past decade in the State of California, and for the citizens of Brisbane. This increase is not just the result of increased demand, but also from the costs related to maintaining the infrastructure. In the Bay Area, sewage lines and treatment plants must be constructed to a size required to treat the inflow and infiltration of rainwater—often more than 50% of the peak winter flow.

The Visitacion-Guadalupe Valley Watershed moves water from San Bruno Mountain, McLaren Ridge and Bayview Hill to the San Francisco Bay. There are several watercourses that pass through the Baylands. Organizations such as the California Native Plant Society, the Watershed Project, Clean Water Action, and San Mateo County Parks have been instrumental in restoring waterways on San Bruno Mountain, around the lagoon, on site and in the PG&E marsh.

The California EPA and the State of California have strong wetland and bay protection standards under the National Pollution Discharge and Emissions Standards or NPDES.

The site has known soil contamination. Dr. Fred Lee * contends that State and Federal limits on concentrations of toxins may not be stringent enough to prevent damage to human health, safety, and the environment. He further notes that current regulatory and monitoring programs consider only a fraction of the potentially hazardous chemicals that may be present on the Baylands site.

Sea level rise could compound and complicate the difficulty of containing contaminants. Lands that are adjacent to the sea or in bodies of water connected to the sea must not on the one hand send pollutants into the sea nor on the other hand fail to take precautions against the rise in sea levels anticipated from global climate change.

SUMMARY APPROACH

The integrated water system planned for the Baylands should aim toward eventually reducing the need for imported fresh water to near zero. We will create a Water Balance investigating the optimal ways to use the four sources of water: rainwater, greywater, reclaimed water and municipal drinking water. It might be useful to investigate local sources of water such as springs and rainwater in combination with a recharge plan, but no extraction should endanger local groundwater or water flows required for the local habitat.

* Dr. Fred Lee prepared an assessment for the Brisbane Baylands Community Advisory Group on November 1, 2010, entitled "Report on the Adequacy of the Investigation/Remediation of the Brisbane Baylands UPC Property Contamination Relative to Development of this Property" http://www.gfredlee.com/Landfills/BrisbaneBaylands.pdf

In our effort to use water in a more efficient manner and to establish greater local control over sewer treatment rates, we will investigate the construction of a local sewage treatment plant on site at the Baylands that would serve all of Brisbane. Whether sewage is treated on site or elsewhere, reclaimed water will be used for all non-food irrigation, commercial toilet flushing and other non-potable uses. Landscaping will follow the Bay Friendly Landscape Guidelines to promote water conservation, soil health and other environmental outcomes.

Water conservation will be integrated into all uses throughout the Baylands. An aggressive strategy for informing the public about water conservation will be implemented.

The restoration and expansion of Visitacion Creek will complement the existing wetlands of the Lagoon and will provide greater habitat for Bay species. Close collaboration with local organizations, which have missions to restore wetlands around San Bruno Mountain, will be a major part of the ecological strategy for the site.

Enhance stormwater quality and reduce impacts through the extensive use of surface flows in swales, by requiring vehicle washing areas drain to the sewer and prohibiting the use of synthetic man-made pesticides and herbicides, by creating large cohesive areas of open space for recharge, and by selecting native plants and grasses for flow areas.

Building water fixtures will beat the 1992 Energy Policy Act flow and flush rate requirements by a minimum of 50% when modeled using the method in the Leadership in Energy and Environmental Design's program for Building Design and Construction, also known as LEED BD+C.

Design and build water and sewer utilities to a seismic standard above current code.

Recognize that the current 100-yr floodplain map may become obsolete. Use the most up-to-date information from the evolving knowledge on climate change and sea level rise, as noted by BCDC and other reports. Build to avoid major flood risk by keeping the lowest finished floor at least 1 foot above the 100-yr floodplain.

7. OPEN SPACE AND HABITAT

Our Baylands vision includes provisions for significant open space and open areas that enhance biological connectedness and habitat preservation.

COMMON INTERNATIONAL TARGETS

The development will make a net positive contribution to local native biodiversity and natural habitats. Any imperiled species must be identified and monitored as part of a local conservation plan. A site-specific action plan to maintain, enhance or revive valuable aspects of biodiversity and nature stocks must be prepared.

At least one opportunity must be identified to regenerate degraded local natural resource stocks (wetlands, lagoon, etc.) and a plan implemented. At least two programs should be showcased, one for biodiversity and one for natural resource stocks.

CONTEXT

The citizens of Brisbane have a strong reputation for being environmental stewards of the land around them. They've worked hard over the years to restrict development on San Bruno Mountain, and have invested funds to acquire open space, remove invasive plant species and enhance endangered butterfly habitat.

Brisbane was influential in creating the first Habitat Conversation Plan (HCP) in the country.

Brisbane's General Plan states that a minimum of 25% of the Baylands will be dedicated as open space/open area. The City submitted an "Alternative Plan" to UPC's specific plan to be analyzed in the EIR process, in which almost 50% of the land would be dedicated to open space/open area. The lagoon will not be counted toward any open space calculations.

Two of the project alternatives studied in the Environmental Impact Report ("Community Proposed," and "Renewable Energy") include a community formulated open space/open area, wetlands and riparian park.

Though surrounded by urban sprawl from neighboring cities, Brisbane still has a rural-like quality. Horses still graze on the slopes of Ice House Hill.

The Baylands is home to a variety of small and medium-sized animal species, including frog habitat. Occasional sightings of coyote and jackrabbits occur on and around the site. The annual Audubon Christmas bird count records an amazing amount of land and water bird species in the San Bruno Mountain, Baylands and Lagoon area, as the wetlands of the San Francisco Bay are on a major migratory bird pathway.

SUMMARY APPROACH

Brisbane's relationship with the natural environment is deeply rooted in respect, and it provides a strong sense of identity and pride for the City. One only needs to walk the neighborhoods and commercial areas to realize Brisbane's wonderful balance between development and nature. It is this balance that will be one of Brisbane's greatest gifts to the Baylands development.

Just as in other parts of Brisbane, recreational open space/open area should be easily accessible to anyone in the Baylands. A comprehensive trail system will connect with natural habitats and create a stronger bond between existing Brisbane and the Baylands.

There will be a diversity of trees and shrubs on the site with open spaces/areas planted with native species. The project will create restored wetland areas and research the potential for setting up a Restoration Zone with the State Fish and Wildlife Department. Butterfly and bee habitat will be fully integrated into the landscaping. A large number of native plants will be used throughout the project. Create a riparian zone to connect the existing wetland areas with each other, and use multiple means of connecting San Bruno Mountain to the Baylands.

The Brisbane Baylands project provides a unique opportunity to employ constructed wetlands to replicate the function of natural wetlands and filter pollutants. Constructed wetlands and bioremediation would not only serve to treat wastewater and minimize additional contamination, but could markedly improve the quality of the land and water in the lagoon and bay. In this way, the Baylands project could help redress the historical contamination and damage that has been done to the site. A study should be conducted to evaluate the potential for bioremediation on the Baylands.

Establishing a larger natural pathway to connect open space on San Bruno Mountain with open space/open area in the Baylands could provide an opportunity to better manage the natural habitat of the overall area for animal movement and the control of invasive plants. The Baylands will financially support the development of an expanded natural pathway and regional habitat management and restoration.

One of the biggest challenges to achieving open space connectivity is the commuter railway line that divides the site into Eastern and Western sections. Creating "green" bridges and/or tunnels to allow trail users and wildlife to safely cross the tracks will be implemented.

The local eco-system could be enhanced with the use of bio-swales to slow down stormwater runoff and treat it for pollutants while creating habitat for local plant and animal species. Controlling light pollution is another important objective as it has deleterious effects on both humans and animals.

The final project plan will incorporate major elements from the renewable energy alternative, as well as the community proposed alternative, including a community formulated plan for open space/open area, wetlands and riparian park. This plan elaborates on the City's adopted Open Space Plan.

Brisbane has a strong record of purchasing property to be dedicated as open space. Continued efforts should be made to create funding mechanisms to purchase property on the slopes of San Bruno Mountain to increase protected habitat area.

Conduct a study on Ice House Hill to determine the significance of butterfly habitat for the endangered Mission Blue and Callippe Silverspot butterflies. If significant habitat exists, explore the possibilities of expanding the San Bruno Mountain HCP to portions of the Baylands.

Collaborate with members of the community and environmental groups that are already working to improve local habitat preservation. Seek out native plant nurseries, and enhance the capabilities of the Mission Blue Nursery to provide greater biodiversity for local seed stock.

8. CULTURE AND HERITAGE

Our Baylands vision embodies a culture of sustainability, small-town community values, respect for local history, a sense of place.

COMMON INTERNATIONAL TARGETS

A site-specific action plan to maintain, enhance or revive valuable aspects of local culture and heritage (everything from local buildings to cultural and natural history) must be produced. At least two areas should be showcased.

CONTEXT

Brisbane prides itself for being independent, community oriented, and environmentally aware. The citizens of Brisbane manifest a high degree of civic pride and community identity. They strongly support open space, sustainability, education, and the arts. While most cities in the Bay Area favored expansive growth after WWII, Brisbane valued its rural qualities, and incorporated nature into the City's identity. Because of the Community's leadership, most of San Bruno Mountain is preserved as permanent open space.

The history of human habitation in the Brisbane area dates back to the Ohlone people. Shell mounds remain as relics of the first inhabitants who used the plant life of the mountain and bay for food, fiber, and medicine.

By the 1800's, most of the territory around Brisbane was ranch land. After the 1906 Earthquake, a few hardy families decided to put down roots and develop the land, calling their new home Visitacion City. Up until 1929, the City of Visitacion was a sleepy, rural community, with only sparse development. However, that year brought to town a man by the name of Arthur Annis, who would later be known as the 'Daddy' of Brisbane.

Mr. Annis was a realtor, who believed the area was full of potential, but lacked proper guidance. According to "A Town Called Brisbane," "Annis's idea was extremely simple -- to permit good citizens of small means **to** build their homes, without unreasonable restrictions, as soon as they contracted to purchase their lots. The era during the Great Depression saw rapid growth, and established many basic amenities for the city; post office, library, public school, volunteer fire department. Arthur Annis also gave the City its new name: Brisbane.

Though Brisbane was establishing itself as a city, its affairs were still being managed by the County. It wasn't until 1961 that the citizens finally decided to become a general law city, voting to become incorporated and electing a city council to help govern them. A year later, the City annexed the unincorporated Southern Pacific Rail Yard, which would eventually be known as the Baylands.

Originally, the Baylands were water and marshland, but near the start of the 20th century, the area began to take on an industrial transformation, concentrating with railroad activity and landfill operations for San Francisco. The first filling took place very early in the 1900's, with a straight berm carrying two rail lines between Visitacion Point (now called Ice House Hill) and the southern entrance to "Tunnel 4" which went underground near Candlestick Point. Tailings from the tunnel and the cut through Visitacion Point provided material to fill west of the rail. The rail line opened in the fall of 1908, making a higher speed rail connection between San Jose and San Francisco, saving five miles and twenty minutes from the original route which went west of San Bruno Mountain. By 1917, the completion of the landfill west of the rail line saw the build out and operation of a rail yard and rail maintenance facilities. There, Southern Pacific employees performed maintenance and heavy industrial rebuilding of engines, passenger and freight cars, as well as sorting incoming and outgoing railcars. It was one of the busiest terminals in the Southern Pacific Railroad system, employing as many as 4,000 skilled workers consisting of machinists, welders, carpenters, pipe fitters, engineers and brakemen. Reuse of materials was typical practice for the railroad.

According to common historical lore, the open water east of the rail yard site was filled with debris and garbage from San Francisco that originated from the 1906 earthquake. However, photographic documentation from this period does not provide evidence to support this claim. Not long after the rail yard was built, San Francisco started dumping their garbage directly into the bay and onto bay mud. Early pictures from 1930's show the landfill starting in the north with semicircular railroad tracks to facilitate dumping. By the 1950's, the Bayshore Freeway (Highway 101) opened along the eastern edge of the landfill.

The waste disposal site caused much anger and discontent from the citizens of Brisbane, and many protests were conducted to have it closed. Landfill operations ended in the 1960's and the rail yard was abandoned in 1982. Both uses left the land contaminated. Since its closure, the landfill area has been surcharged with presumably clean soil from several debris recycling operations on site.

SUMMARY APPROACH

One of the most important components of a complex and sustainable culture is that it is a living culture. The present actively connects the past to the future. Some legacies of the past will be showcased and built upon in the nucleus of culture in the Baylands - the encouragement of contemporary public art in the Baylands will showcase Brisbane's living culture.

The Roundhouse, a nationally registered historic place, could be our nucleus or cornerstone in showcasing Brisbane's legacy as a social hub of the Baylands. Its brick structure links the present to the Baylands' rail yard past in a meaningful way. The nearby "Lazzari Fuels" building, formerly the railroads "Tank and Boiler" shop, has not been researched or nominated for historic registry, but is of similar significance. Also on site are the remains of the turntable, powerhouse and other foundations or artifacts. This valuable area can play an important role in preserving the history and skilled tradesman culture of the site. Standards of the National Trust for Historic Preservation and US Secretary of the Interior should be referenced when revitalizing and

rebuilding. A local preservation ordinance may need to be enacted to define standards and procedures.

Another area to showcase is the City's relationship with the landfill. It will be an informative journey to explore the history, the confrontations, and the healing of the land. Since the Baylands was previously part of the Bay, the history of the early indifference to the consequences of filling the Bay to the present awareness of its ecological importance should be taught. A possible historical exhibit could be incorporated within the Recology campus?

Though man-made waste played a major role in the creation of the Baylands, and is considered by many a part of history not to be repeated, waste may still play a significant role in the future development of the Baylands. With the recycling expansion of Recology, and the recent technological breakthroughs for converting waste into energy, the Baylands could be a shining example of responsible waste management and ecological economics.

The Baylands should be designed to emphasize the connection between San Bruno Mountain and San Francisco Bay, utilizing the natural watershed as well as a connecting trail network. Informative signs throughout the trail network can help people understand the transformation of the land beneath their feet.

Besides the concern for an aesthetically pleasing and compatible development profile, the role of public art should be incorporated throughout the Baylands development. A funding mechanism that supports this endeavor should be explored.

Though small town Brisbane cannot be duplicated in the Baylands, the Community's values will be woven throughout the development.

9. ECONOMIC VITALITY WITH EQUITY AND ECOLOGY

For the Baylands we envision a thriving, diverse and resilient economy that supports equity in employment, green business products and practices, socially responsible business behavior, locally-oriented business enterprises, and ecologically based measures of performance.

COMMON INTERNATIONAL TARGETS

One Planet Communities are expected to create a social environment where business, nature, and daily life are in harmony with each other. The three dimensions of sustainability - ecological economics, social equity, and environmental health - are woven into every decision regarding the infrastructure, types of approved uses, building sites, and open space/areas.

Too many times short-term market valuations create negative long-term social and environmental consequences. A sustainable economy creates a framework based on respecting the Earth's resources and the areas from which these resources have been acquired, facilitating diversity in the market place, striving to achieve a closed loop product stream, building structures that are highly energy efficient, and reinvesting in the local community.

Targets should be set to boost achievements in the three dimensions of sustainability. At least three case studies should be showcased – one from each dimension.

CONTEXT

The San Francisco Bay Area is recognized throughout the world as a beacon of creativity and innovation with an abundance of businesses that offer jobs with good pay and benefits. Many of them have also been recognized in the areas of ethnic diversity, gender equality, and giving back to their communities. The region has the largest number of public benefit corporations in the world.

The region supports some of the finest institutions for higher learning in the country. Universities such as Stanford, UC Berkeley, San Francisco State, as well as dozens of other universities and community colleges, provide a highly educated work force to the area, inspire research and development for many sectors of the economy, and produce an amazing number of successful entrepreneurs.

Located between San Francisco and the northern portion of Silicon Valley, the Baylands is well positioned to accommodate a variety of businesses, cleantech, biotech, cloud computing, financial -- the list is endless. Companies come to the Bay Area because of the talent pool, established infrastructure, temperate weather, natural beauty, cultural opportunities, and entrepreneurial spirit. Since the Baylands is mostly an undeveloped site, it offers a unique

opportunity to plan and implement a state-of-the-art sustainable infrastructure that should attract these businesses.

With respect to fair trade practices, the region is a leader. Cities such as Berkeley and San Francisco have become "fair trade cities," bringing local awareness to securing justice and equity for producers, artisans, farmers and workers in developing countries.

Though the area thrives in creating high tech economic opportunity, there are many individuals who do not possess the skills necessary to be hired for these jobs. On the other hand, our society has many individuals who work jobs that do not require a college education, but their labor is still valuable to the community.

Like so many places in and around the San Francisco Bay Area, San Mateo County has high housing costs that are unaffordable to many working class people. Combined with a high percentage of single-family homes in the existing housing stock, there is a shortage of affordable housing. This shortage is considered by the Association of Bay Area Governments (ABAG) to be an impediment to sustainable economic development.

There may be pressure from State and regional bodies to make Brisbane implement housing as an approved use in the Baylands because of the transit/housing focus in recently approved State legislation (SB 375 - Sustainable Communities). The law ties funding assistance for infrastructure projects to transit oriented mixed-use development (Priority Development Areas).

Brisbane's General Plan prohibits housing in the Baylands. Many residents have expressed concern that housing in the Baylands would not be safe because of potential exposure to toxic materials that have been used and disposed of in the landfill and former railyard. There is also the argument that there will be ample housing in the new developments planned across the border in San Francisco for those working in the Baylands who wish to live nearby. However, it is not clear how much of that housing will be affordable, especially with the recent demise of redevelopment agencies and their support for affordable housing.

California has the highest green building standards in the country. Despite perceptions among some in the real estate and financial sectors that green buildings cost a lot more to build than conventional buildings, the major studies of this issue conclude that the "green premium" is negligible (1-2%) or non-existent, especially if an integrated sustainable approach is taken early in the design process (*The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Task Force: 2003)*. The integrated approach recognizes that spending more on one component, such as passive solar, may be compensated for by spending less on another component, such as the HVAC system. Furthermore, this same study concludes that in 20 years the initial green investment will yield returns of over ten times in operational and productivity savings.

SUMMARY APPROACH

The Baylands project is expected to bring thousands of jobs to Brisbane and be a showcase of sustainability that provides socially and environmentally useful goods and services. The

infrastructure planning and construction will incorporate sustainability principles across the board, so that economic vitality with equity and ecology becomes the way business is done. To do this, an ecological perspective must inform the planning, construction, operation, and evaluation of the development over its lifetime.

At the heart of our approach is an acknowledgement of the tension between short-term and long-term decision-making. For-profit organizations often focus on meeting short-term financial targets rather than long-term economic development. The public interest perspective focuses on avoiding long-term irreversible negative impacts to land, air quality, the Bay and our community's health and well-being. While both ways of thinking co-exist, the concerns of sustainability require that we introduce long-term decision-making into the for-profit process.

A tool for helping make decisions with long-term benefits is called "Life Cycle Cost Analysis (LCCA)," which is recognized by the National Institute of Standards and Technology (NIST) to evaluate the acquisition/construction, owning and disposing of a building or building system. According to the NIST "Performing an LCCA greatly increases the likelihood of choosing a project that saves money in the long run." A truly energy efficient building that is powered by renewables is not only much less costly to operate over its lifetime, a substantial benefit for its occupant, but it also emits few if any greenhouse gases, a major benefit for society. Reduction in pollution and less contribution to climate change are not only major public benefits, but also sound business practices.

The business areas of the Baylands will be designed to best support local, small, and public benefit companies. These companies will be given priority in leasing and purchase.

The question of whether housing will be allowed as part of the Baylands development has important impacts on sustainability and the approach to creating an economic plan. The Baylands is currently zoned for commercial and industrial uses in the City's General Plan, and citizens have expressed strong concerns about changing the zoning to allow housing because of soil contamination and a distrust that remediation would render the site safe for people living there.

Because the developer has requested a General Plan change to allow housing, this issue is being studied in the Environmental Impact Report. It will thoroughly explore the sufficiency of the proposed remediation and also the potential benefits of including housing, such as reducing traffic and helping create a strong Baylands community. The housing issue is further complicated by disagreement over the adequacy of the regulatory standards that would be applied to the determination of safe living environments.

The residents of Brisbane will determine the future of housing in the Baylands. If housing is allowed, it may be appropriate to emphasize alternative forms of housing for the Baylands that address the needs of seniors, students, artists, and those wanting to live in "community-based" live-work environments. By looking at housing from the view of what is needed, and then structuring it in a way that is affordable, community focused, safe, and sustainable, it may be possible to provide living opportunities that are compatible with existing Brisbane.

Development works best when the needs of individuals and corporations are compatible with each other. The maintaining of a sustainable sense of place is the responsibility of all, and thus financial mechanisms need to be created so that social benefits such as art, health, nature, legal and spiritual, thrive in perpetuity for all Brisbane citizens and workers.

By creating this type of economic paradigm, we'll create greater awareness of the earth's resources, the working and social conditions of people, the life cycle of the products we use, and the connectivity that truly binds us all together. Opportunities for a diverse, creative and robust development, supported by residents, workers and businesses can only be achieved through the empowerment of all.

Much can be learned about promoting fair trade from San Francisco and Berkeley, as well as organizations such as Fair Trade Towns USA.

The more locally owned small businesses located on the site, the better. A program should be established that attracts businesses that understand the value and benefits of green practices as being a part of a truly sustainable development.

Social equity can be measured by quantitative ecological measures, such as living incomes and adequate health insurance. Employers should be encouraged to provide fair wages and benefits. Employers who have bad records in these respects should be discouraged from locating in Brisbane. Employment spaces should be safe and work enhancing. Green certification with existing third-party programs should be the objective of all businesses in the Baylands.

The Baylands should be a model of sustainability. That can only happen if an ecological perspective informs the planning, construction, operation, and evaluation of the development over its lifetime. Conventional economics and financing should not be allowed to undermine the attainment of long-term sustainable development.

10. HEALTH, SAFETY AND HAPPINESS

Our Baylands vision is to create a future where it is easy, attractive and affordable for people to lead happy, safe and healthy lives within a fair share of the earth's resources.

COMMON INTERNATIONAL TARGETS

A plan for promoting health, safety and happiness for all who engage the Baylands must be created, building on emerging findings from credible research. Satisfaction levels and concerns must be regularly monitored and evaluated. The feasibility of adopting UN standards for health, security and environmental quality should be explored. At least two examples of strategies to promote health, safety and happiness must be showcased.

CONTEXT

The Baylands is a brownfield site, comprised of a former Southern Pacific Railyard and San Francisco's municipal landfill. During the past couple of decades, extensive remediation efforts have taken place to reduce the exposure levels of the contamination that is found throughout the site. Another source of contamination on the Baylands is the Kinder Morgan Tank Farm. There have been documented leakages and air pollution. Efforts to address both have been instituted.

The concern over contamination exposure is one of the main reasons why the citizens of Brisbane in their General Plan have prohibited housing as a land use in the Baylands. In 2006, the Brisbane Baylands Community Advisory Group (BBCAG) was formed, so that citizens could engage the agencies that will ultimately be responsible for approving a plan for remediating contamination found at the site. The lead agencies assigned to the site are the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board. The DTSC is responsible for the northerly portion of the former railyard, identified as Operable Unit 1. The Water Board is responsible for the southerly portion of the railyard, identified as Operable Unit 2, and the landfill site easterly of the Caltrain line. The Environmental Health Division of the San Mateo County Health Services Agency also regulates closure of the former landfill easterly of Caltrain.

In an effort to provide an independent analysis of the contamination found at the site, the BBCAG enlisted the help of Dr. Fred Lee. Dr. Lee gave a Baylands remediation presentation to the Community in 2010, and also provided a report that gave an assessment of the *"adequacy of past studies of the pollutants in soil, water, and gaseous releases, to adequately define the presence and public health/environmental quality implications of potentially hazardous chemicals in each of the major areas of the UPC Brisbane Baylands area..."*

Without proper understanding of the contamination that exists at the site, and an adequate plan to remediate and monitor this contamination, Health, Safety and Happiness cannot be

achieved with a clear conscience. The need for an experienced, citizen respected, independent firm to ensure proper remediation and monitoring of the contamination for the community is critical to the safety and success of this development.

The Baylands has the potential to provide opportunities for people to be engaged and empowered, whether they are an employee, consumer, student, or if allowed, resident.

The region is known for its high quality of life, yet with the high cost of housing and transportation, many residents have limited time for leisure activities. The Baylands creates an opportunity to enjoy leisure every day with a walk to nearby restaurants, cafés, services, entertainment, as well as recreational opportunities and open space.

The United States spends more money on health care than any country in the world, but the high cost of coverage has left many Americans uninsured, which has resulted in thousands of unnecessary deaths. Many of these deaths were caused by not having access to basic medical advice and observation, where preventive measures could have been implemented before terminal medical conditions took hold. Local universities such as San Francisco State University, have a Student Health Service that provides basic care for acute and chronic problems, promotes health awareness, educates students about preventive care, disease management and therapeutic choices, and helps students develop the skills to manage their own health. Local health providers, such as Seton and Kaiser, have extensive wellness programs.

SUMMARY APPROACH

Dr. G. Fred Lee's report will be used to better understand regulator recommendations for testing, remediation, and monitoring the contamination that exists at the Baylands. An independent peer review will assist the City in understanding the mitigation findings that will be presented by the agencies.

The Baylands could be showcased as a demonstration site for bioremediation, the process of harnessing micro-organisms to metabolize and remove some pollutants in contaminated soil or groundwater.

The Baylands project offers the opportunity to employ constructed wetlands to treat wastewater, to improve the quality of water in the bay and lagoon, and to begin to redress the damage that has been done to the site in the past.

Community meetings will be used to get input on what works and what doesn't work and what the larger community would like to see happen at the Baylands. We will use *play* and *fun* to generate ideas and seek to keep a light heartedness when evaluating our success.

The San Mateo County Health System could play a major role in helping the Community to adopt health standards to the uses it feels should be implemented at the Baylands. The possibilities of providing basic healthcare for Brisbane residents and workers that is supported by an increase in sales tax or other funding mechanism, such as the one provided by San Francisco State University for its students, should be explored.

The Baylands development should enhance the standard of living that currently exists in Brisbane. The Baylands should be a destination, a source of pride and engagement for the Community, rather than just a location on the outskirts of town.

A pedestrian friendly design will encourage walking, with the majority of buildings located within ½ mile of the proposed Multi-Modal Station. Sports fields, hiking trails, and bicycle paths can offer healthy, physically active recreational opportunities.

The natural beauty of the area will be enhanced by complementary architecture, community gardens and comfortable public spaces for community activities.

The Baylands should bring out the best a society has to offer by providing a variety of job skill opportunities with living wages, ample opportunities for recreation and leisure within the open space and open areas, ensure that the health and safety for all who engage it is never compromised.

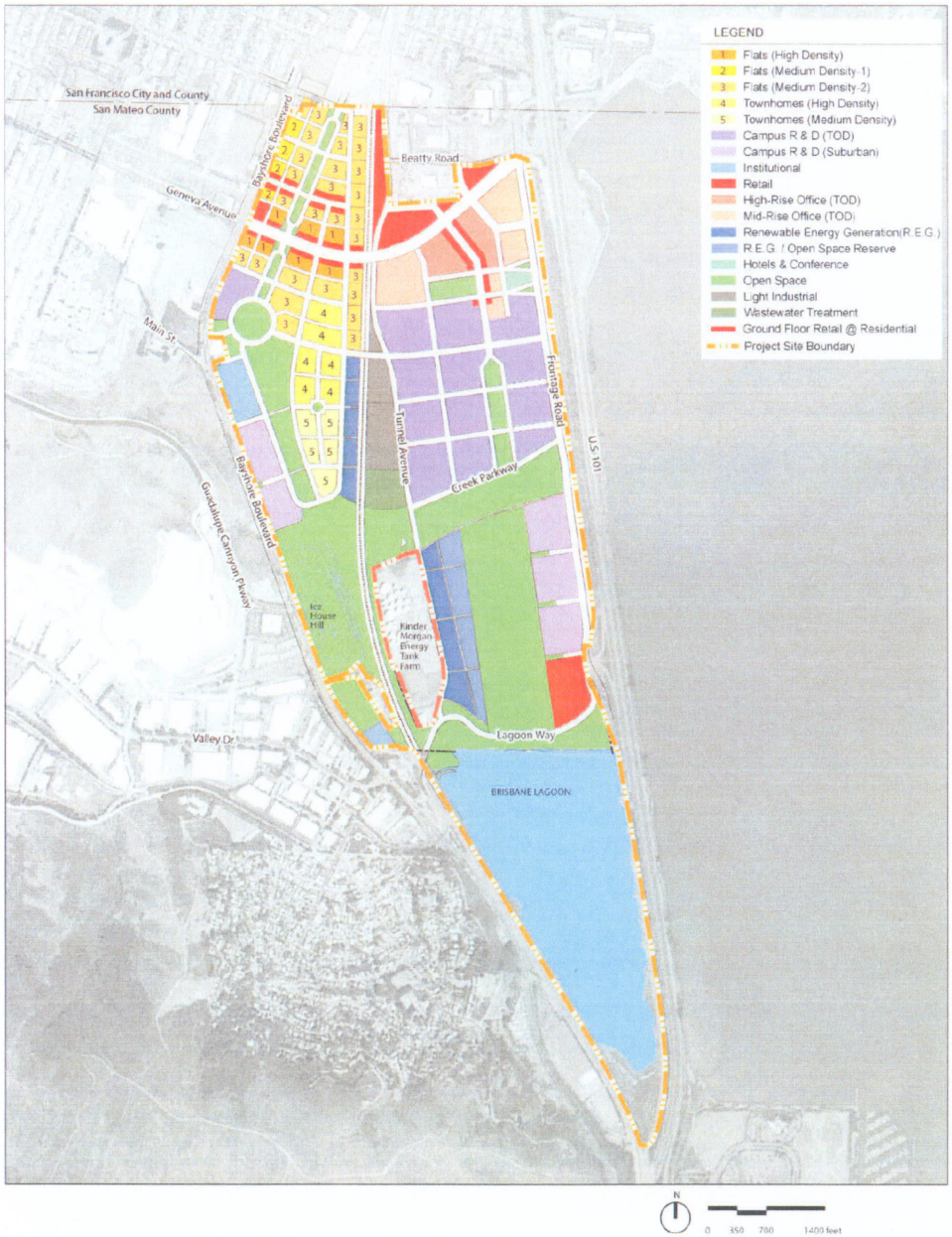
APPENDIX

Proposals that have been studied in the EIR

DEVELOPER-SPONSORED Project Summary

Total Site Area	684	acres	Comm. and Indust.	6.9	million sq. ft.
Public Use/Open Space	206	acres	Residential	4,434	units =
Lagoon	111	acres		5.15	million sq. ft.

The total square footage proposed in the UPC Specific Plan is 12,096,300 of which 5,150,400 is housing. These figures are from Chapter 4 on Land Use, page 29. The link to the Plan is on the City website.



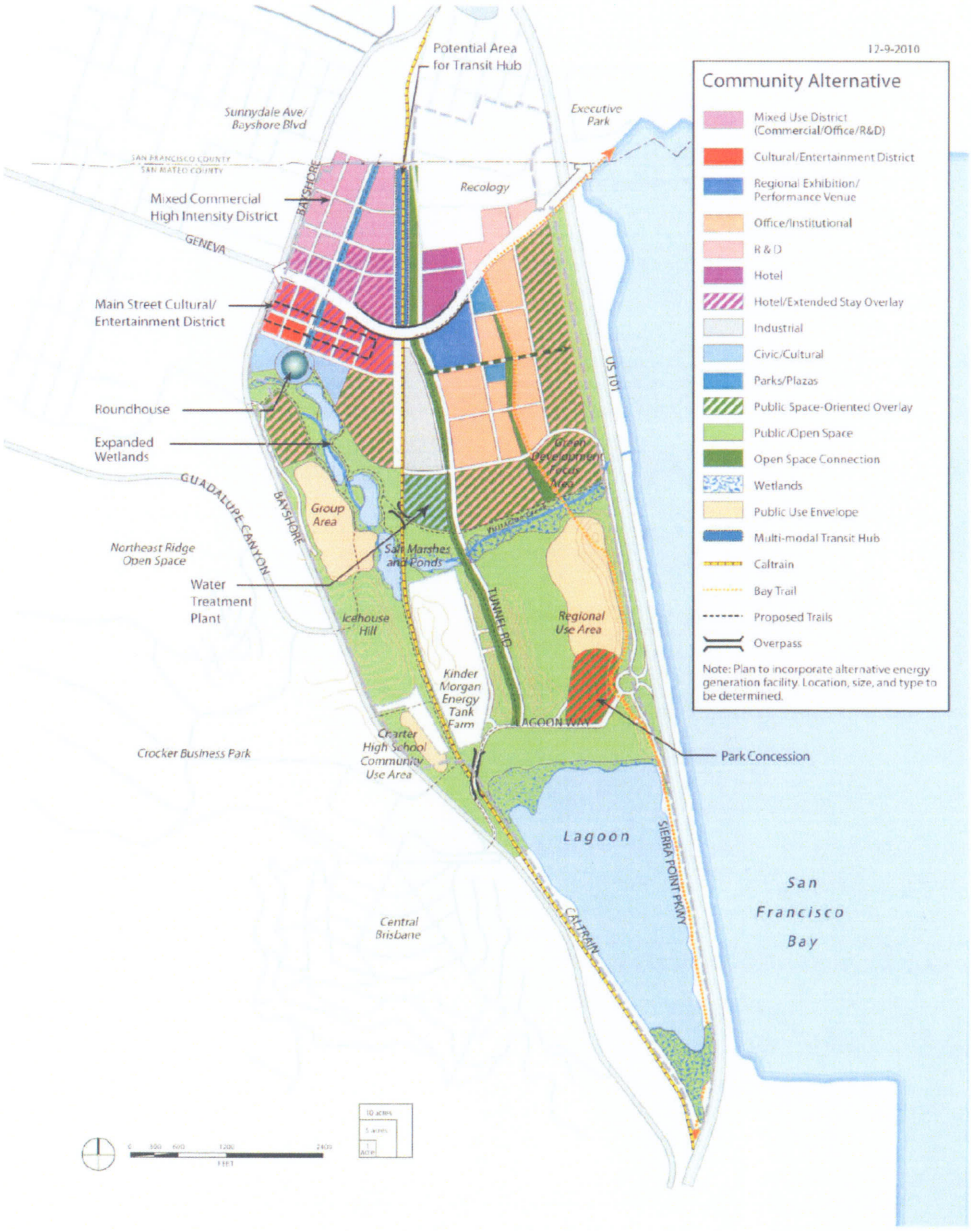
SOURCE: Wallace Roberts & Todd, LLC, 2010

Brisbane Baylands . 206069

Figure 4
Proposed Land Uses
Developer-Sponsored Project

COMMUNITY ALTERNATIVE PROJECT SUMMARY

Total Site Area	684	acres	Comm. and Indust.	8.3	million sq. ft.
Public Use/Open Space	330	acres	Residential	0	units
Lagoon	111	acres			



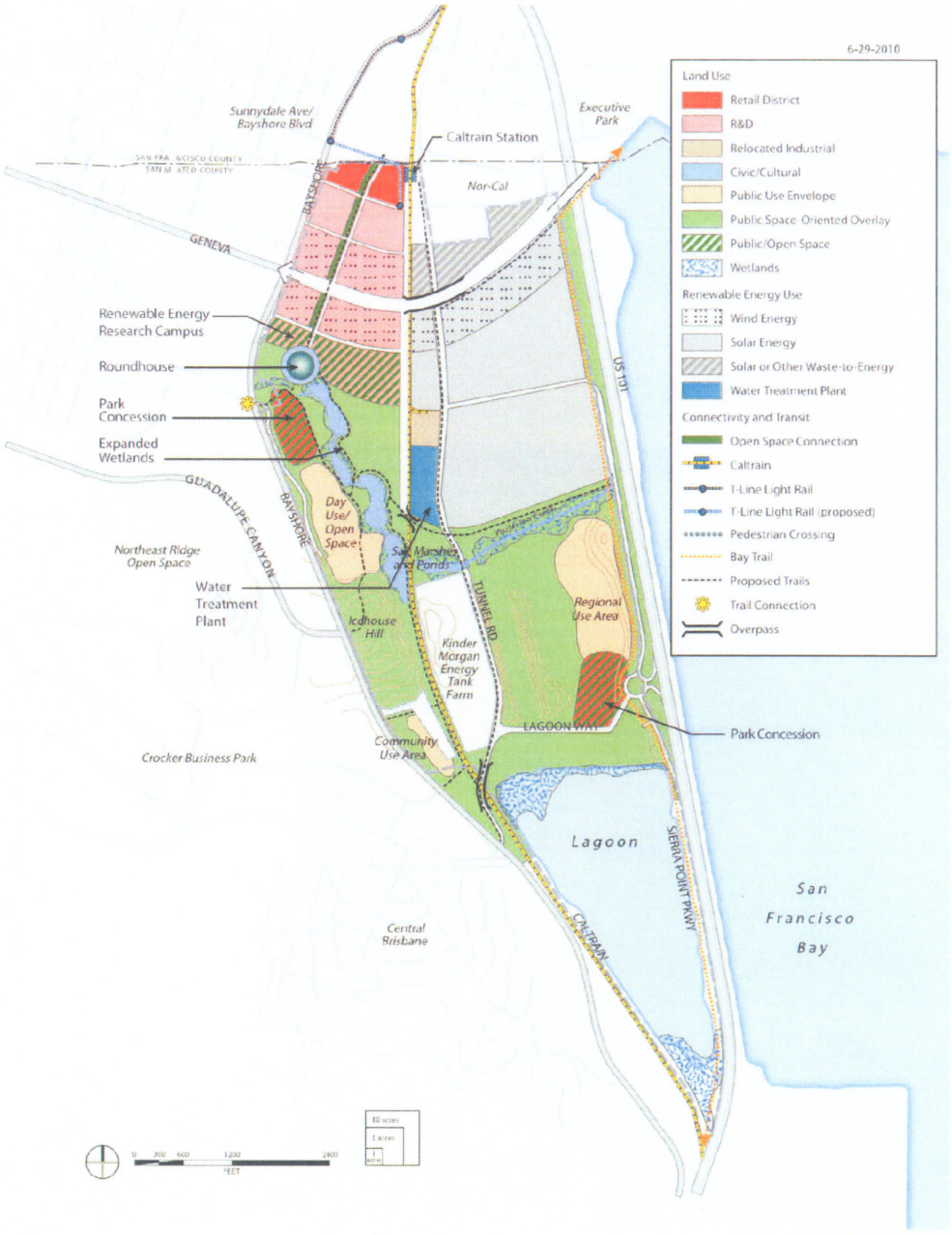
SOURCE: Dyett & Bhatia

Brisbane Baylands 206069

Figure 6
Proposed Land Uses
Community Preferred Plan

RENEWABLE ENERGY ALTERNATIVE PROJECT SUMMARY

Total Site Area	684	acres	Comm. and Indust.	1.0	million sq. ft.
Public Use/Open Space	330	acres	Residential	0	units
Lagoon	111	acres	Alternative Energy	170	acres



SOURCE: Dyett & Bhatia

Brisbane Baylands . 206069

Figure 14
CEQA Alternative - Renewable Energy Land Use