

3 | SUSTAINABILITY FRAMEWORK

3.1 SUSTAINABILITY OVERVIEW

The development of the Baylands is organized around elements of a sustainable community. These elements relate to every section of the Specific Plan, and fit together as an integrated, whole system. This Sustainability Framework chapter is, in essence, an overview of the Specific Plan. The intent of this plan is to set a new benchmark for the sustainable design and performance of new community development of this scale.

A healthy community is synonymous with and dependent on a healthy environment. It is important to emphasize that sustainability, for the purpose of this plan, is defined in its broadest sense, including environmental, economic and social sustainability. Accordingly, the development of the Baylands as summarized in this framework will not only generate benefits to air quality, water quality, ecological resources, and surrounding communities, but will regenerate a previously degraded site into a thriving, and resilient community.

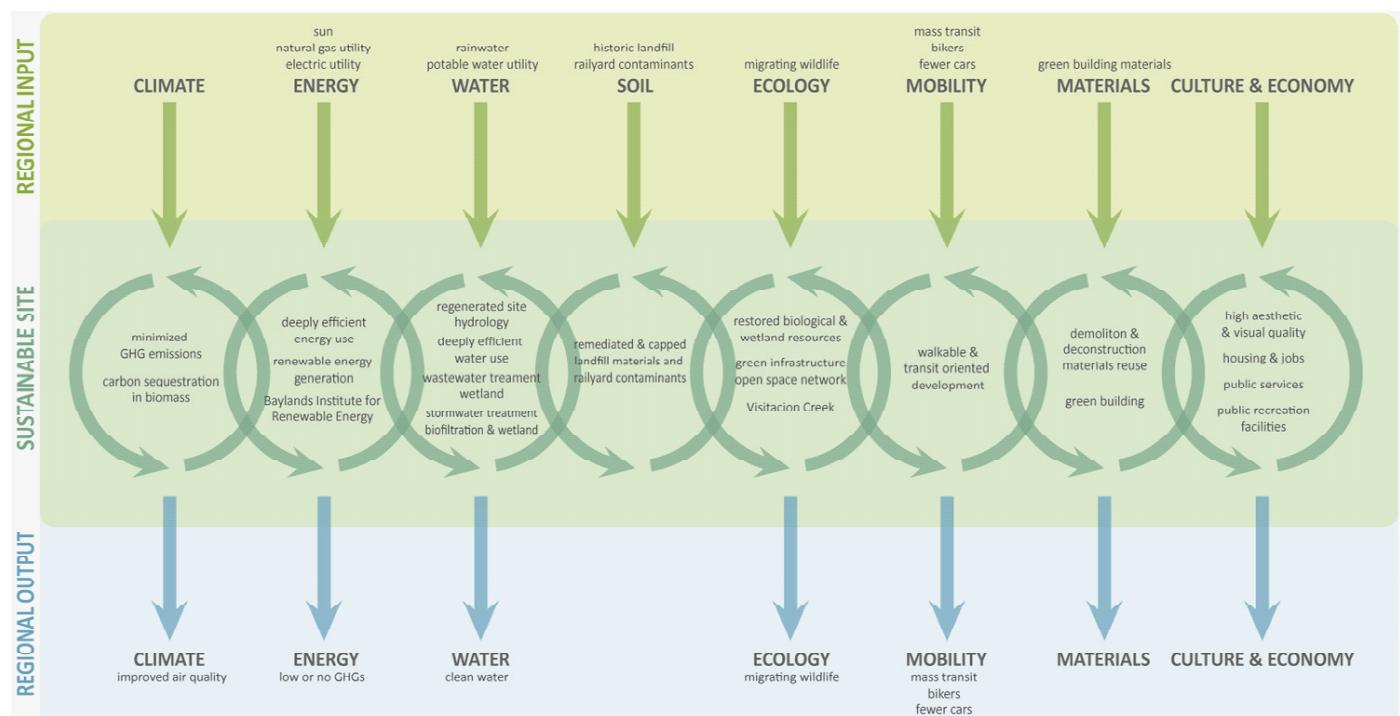


Figure 3.1: Brisbane Baylands Sustainability Framework Conceptual Diagram

The Planning Area is uniquely situated as a large brownfield, infill site with existing and proposed future access to mass transit. The development will offer housing for adjacent job-rich urban centers as well as generate green jobs in the Baylands. Through remediating contaminants on the denuded site and creating ecologically-functioning corridors, such as Visitacion Creek, the development of the Planning Area also offers environmental benefits to regenerate the site and surrounding region.

As shown in Figure 3.1, a sustainable community considers resources as interrelated, closed-loop systems, considering “waste” products as nutrients to feed these cycles. Any inputs and outputs to and from the Baylands should on average improve the surrounding region and beyond.

Each of the following elements of sustainability listed below will describe the Specific Plan goal to efficiently use resource inputs from outside the Baylands, regenerate and cycle resources in the Planning Area, and maximize beneficial outputs such as reclaimed water, clean air, housing, jobs, public recreation, efficient transportation, education, and demonstration of a model sustainable community. The Sustainability Framework diagram, illustrating the elements of the Specific Plan that will work together, is shown in Figure 3.2.

3.2 CLIMATE AND GREENHOUSE GAS EMISSIONS

The development of the Baylands will comply with the intent of the Global Warming Solutions Act (Assembly Bill (AB) 32) by reducing greenhouse gas (GHGs) emissions through a variety of land use, transportation, infrastructure, and open space strategies.

Land Use and Community Design

The development of the Planning Area consists of a compact, mixed-use community that is made walkable through the provision of a combination of local and regional planned services and destinations. Land use and community design strategies which aim to reduce GHGs include:

- Walkable streets
- Mixed-use, compact development
- Neighborhood serving retail and services
- Connections between on-site circulation and regional transit hubs
- Structuring of development density to fully leverage transit resources

Chapter 4: Land Use and Community Design develops these principles through detailed land use and urban design recommendations.



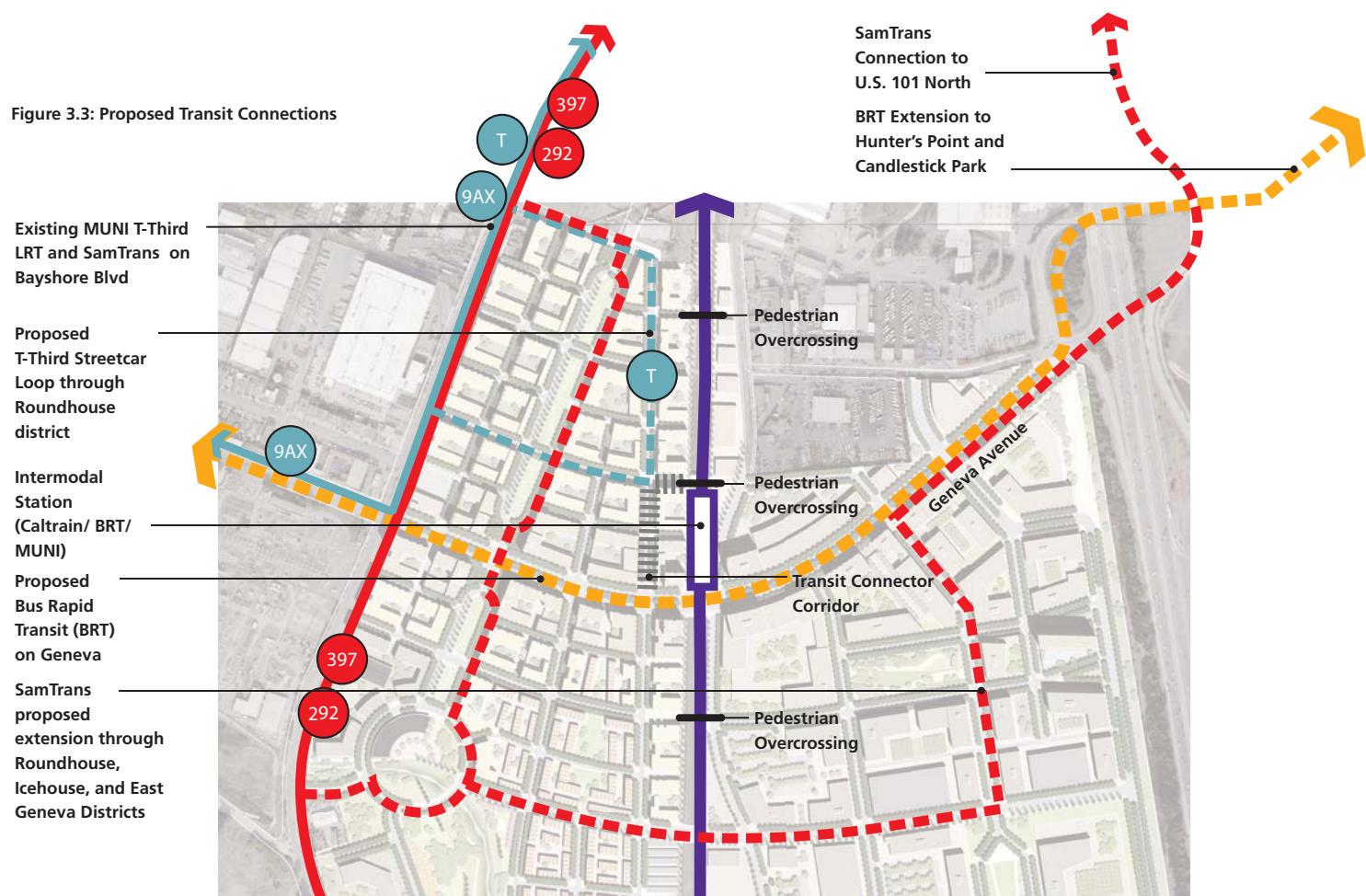
Mobility Options

The development of the Planning Area will minimize GHGs from transportation through its adjacency to existing transit stops as well as planned future transit stops in and near the Planning Area including:

- Caltrain Bayshore Intermodal Station with Caltrain transit service every 30 minutes;
- MUNI T-Third LRT extension to Mission Bay and downtown San Francisco with transit service every 8.5 minutes (peak) to 10 minutes (mid-day);
- MUNI proposed BRT (28L) to Bayview, Hunters Point, Candlestick Point areas and the Balboa Park BART Station with service every 5 minutes;
- Additional proposed MUNI bus improvements with service every 7.5 minutes (peak) to 12 minutes (mid-day);
- Additional proposed SamTrans bus improvements with bus service every 15 minutes.

Chapter 6: Circulation discusses the various transit and TDM strategies, in addition to overall bicycle, pedestrian, and vehicular transportation systems.

Figure 3.3: Proposed Transit Connections



3.3 ENERGY

Development within the Planning Area is to be a model of energy efficiency, using various energy conservation and generation practices including deep efficiency that exceed the State's energy code, Title 24, and an onsite solar farm to provide supplemental clean power. New electric, natural gas, and communication lines will be constructed to all of the applicable codes and requirements, providing appropriate services to serve the new community. As part of the electrical system, the Planning Area is designed to maximize use and generation of renewable energy to the extent feasible.

Beyond generating renewable energy on the site, a robust green building program for all new buildings will reduce reliance on traditional energy sources. LEED Silver, GreenPoint rated, or better will be a requirement for all new buildings constructed at the Baylands in addition to exceeding the 2008 Title 24 energy efficiency and 2010 CALGreen building standards. Strategies for energy reduction in buildings include installing energy efficient lighting, appliances, and HVAC systems. Also, individual buildings may include renewable strategies such as capturing solar, wind, geothermal, and biomass energy outputs. These elements will further contribute to reduced GHG emissions from offsite power plants that primarily use conventional fuels and significantly reduce the emission of GHGs from building operations.

Finally, the Baylands will include the renovated roundhouse, which will be a center for up-to-the-moment research on renewable energy. This will make the Baylands a hub for current thought and innovation on the topic of renewable energy, which will highlight the community in the forefront of this progress.

The overall energy strategy will be fully outlined in *Chapter 7: Utilities and Services* and energy efficiency in building design is included in *Chapter 4: Land Use and Community Design*.



Solar panels may be included on roofs of individual buildings.



Up to 25 acres of ground-mounted solar panels are proposed within the Planning Area to produce renewable energy for future development.

3.4 WATER

The Specific Plan puts forth a multi-faceted approach to water resources. First, development is interwoven with a system of stormwater infrastructure consisting of biofiltration and treatment wetlands that will improve water quality and reduce water quality impairments from the development of the Planning Area. Second, efficient use of potable water will be mandated through building and site design requirements. This goal is accomplished through high efficiency plumbing and fixtures that exceed code, and use of reclaimed water.

The stormwater collection and conveyance system located within the Planning Area will be designed to accommodate additional runoff generated by new development-related impermeable surfaces and capping on the landfill portion. Sea level rise is also a future component that may underscore the need for this sustainable infrastructure. The system will be designed to achieve or exceed the required stormwater treatment for runoff prior to the outfall to the Brisbane Lagoon and the San Francisco Bay. Additionally, the new storm water collection system will protect the Planning Area from flooding and improve existing flood-prone areas during 100-year rainstorm events. Bioswales within private development areas and the street rights-of-way, the riparian corridor that includes additional flood capacity, and detention zones along Visitacion Creek will provide storm water treatment as well as create a wildlife habitat in the Planning Area.

Resilience to Sea Level Rise

Development of the planning area will increase final elevations and make it resilient to flooding from sea level rise. The mounded elevation of the landfill area from decades of use as a municipal landfill and clean fill storage area has already lifted the area out of the potential sea level rise flood zone. Additional soil to be imported to the western portion (former railyard) of the planning area will protect the upland portions of the planning area from flooding due to sea level rise. Lower-lying areas will be part of the open space network, or include substantial landscaped areas, which will allow areas for stormwater filtration. These strategies will allow the Baylands to be resilient to global changes that may impact future development in waterfront areas.

Development sites and buildings will likely be dual-plumbed to facilitate the use of reclaimed water for non-potable uses where allowed and safe. The construction of the water recycling plant, if permitted, will provide the necessary irrigation for the open space landscaping included in the Specific Plan, as well as the required plumbing fixtures in the proposed commercial buildings. The supply of reclaimed water will achieve the goal of reducing the overall consumption of potable water from the municipal supply.

The proposed onsite Water Recycling Facility will aim to incorporate wetlands for wastewater treatment. The treatment wetland will not only require less energy, but also creates a feature integral to the open space plan. A portion of the treated water will be usable for irrigation and other non-potable water needs, decreasing the potable water demand within the Planning Area.

The systems will be designed to be compatible with either conventional or natural wastewater treatment plant systems. The new water recycling facility will treat greywater flows from the Planning Area and have the ability to recycle portions of the flow for use as irrigation and other non-potable uses.



Rainwater detention areas are included within street rights-of-way throughout the planning area.



Open space areas will serve the dual purpose of providing areas for natural filtration of stormwater runoff and recreation.

3.5 SOIL

New development in the Planning Area will be preceded by the remediation and/or proper capping of legacy contamination of the soils. The former landfill portion served as a depository for wastes from the region for decades and the soil was contaminated as a result. Instead of exporting these onsite underground materials, the development will remediate and/or cap legacy contamination from the surface soils and utilize fill that meets regulatory standards to cap existing landfills. Different types of contamination associated with the landfill and the railyard will be remediated per the requirements of the oversight agencies, such as the CRWQCB and DTSC to ensure human health and safety, as well as environmental quality. The infrastructure plan requires land use and environmental strategies in areas where necessary to achieve the goal of safely improving and reusing the currently underutilized site. Appropriately designed barrier layers and systems for mitigating gases and proper disposal of leachate and landfill gases will ensure long-term safety of users and occupants in the Baylands without requiring extensive excavations that would generate the need for unnecessary haul trips and additional landfill space in offsite locations.

Site grading and improvements, in combination with structural components, will enable the Baylands to be safe and protected from contaminants, and help reduce the risk of differential settlement or earthquake damage. Critical infrastructure will be designed to facilitate needed utility and emergency access and service in the event of a major seismic event.

The full Infrastructure Plan outlining this strategy is included in *Appendix D* of the Specific Plan.

Carbon Sequestration

Increasing biodiversity and biomass, and improving soils in regenerated woodlands, meadows, wetlands, and other landscaping in the planning area will sequester carbon and improve air quality. Carbon Sequestration is a key aspect of reduced GHG emissions, which is another way in which the Baylands development addresses resistance to climate change.

3.6 ECOLOGY

The existing landfill and railyard portion of the Baylands consists of artificial and disturbed sites that are largely devoid of habitat. The location of the Planning Area at the base of San Bruno Mountain, on the San Francisco Bay, and at the mouth of Visitacion Creek, offers significant opportunities for ecological restoration. The Specific Plan aims to improve the hydrological functioning of Visitacion Creek as part of a central open space feature: Visitacion Creek Park. The creation of wetlands along this creek and the Lagoon fringe, along with an extensive open space framework – including meadows, grasslands, woodlands and chaparral typical of the local Bay edge ecology – aims to create a diverse and vibrant open space ecology throughout the Baylands. This network of open space will filter stormwater, improve air quality, provide habitat for wildlife, and offer recreational



The Lagoon offers opportunities for improved ecological functioning.



The open space and natural environment of the Baylands will seek to balance development with a natural setting.

opportunities for the Brisbane community. These green infrastructure corridors will also provide ecological connections between regional open space networks, which extend between San Bruno Mountain and the open water areas of the Lagoon, which provides habitat throughout and can contribute to wildlife movement.

Ecological improvements are discussed in detail in *Chapter 5: Conservation and Open Space*.

3.7 MOBILITY/CIRCULATION

Transportation represents the greatest contributing sector of greenhouse gas emissions in California. The Baylands will be a pedestrian-friendly, transit-oriented development. Located adjacent to multiple existing and proposed transit corridors and hubs, residents and employees will be able to commute to work, go shopping, or recreate without getting in their cars. The Baylands will be a place where walking, biking, and the use of mass transit can take precedence over driving. The development of a new intermodal transit station—where the extended Geneva Avenue crosses the Caltrain corridor—is a key component of a sustainable transportation network. Convenient, reliable, safe, frequent and easily accessible transit options will become available for travel in any direction. From the intermodal station, the land uses at appropriate densities will radiate out with the goal of locating the majority of the residential population within a quarter-mile walk or bike ride to convenient public transit, and the majority of the total full time employment population within a one-half-mile walk or bicycle ride. Free on-site shuttle service will be available for workers and visitors to travel to destinations beyond this distance. The Baylands will be a community where residents and workers can feasibly live and work without owning a car if they choose not to. Finally, the Specific Plan proposes housing in a jobs-rich location, in order to shorten or eliminate commutes and the associated production of GHGs from auto emissions. Specific Plan circulation and mobility options are outlined in *Chapter 6: Circulation*.



A variety of mass transit options will be included in order to ease traffic congestion and augment regional access to the Baylands.



Compact development within the Baylands will allow for the ability to walk and bicycle throughout.

3.8 MATERIALS

A sustainable approach to materials selection typically includes the use of recycled or reused, and locally-produced or harvested materials. The Baylands features only a few older structures that may be reused as the majority of the historic structures have been completely removed from the site many years ago. There is, however, the ability to reuse materials from nearby sites that may echo a similar time period and aesthetic in future construction, which would still source local materials, and acknowledges the Baylands' industrial past.

Existing onsite materials may be used also to shape the land for enhanced ecological, hydrological, recreational and development function. To the extent feasible, deconstructed materials and fill may be reused within the Planning Area or for nearby offsite use for pavement materials. This will reduce the need for quarried materials and truck hauling, thereby reducing transportation-related emissions, and may also count towards sustainable building design credits (LEED Silver, GreenPoint Rated, or equivalent). With the extensive proposed landscaped areas, ample opportunity will exist to locally source nursery materials or even to set up an on-site nursery.

In general, materials used for buildings, landscape, and infrastructure will be chosen with a preference for characteristics including:

- Rapidly-renewable
- Recycled content
- Locally sourced
- Sustainable harvesting practices
- Low or no volatile compounds or off-gassing.

New buildings will be designed to be conducive to onsite and/or offsite separation of solid wastes, recyclable paper, plastic, glass and metal objects, and compostable organic materials, and will be compatible with municipal recycling services. The Specific Plan's requirement to include an educational component on the topic of sustainable consumption practices will complete this goal.

Building material selection and sustainable building requirements are included within the building design guidelines contained in *Chapter 4: Land Use and Community Design*.

3.9 CULTURE AND ECONOMY

The Brisbane Baylands Specific Plan is crafted and organized with the purpose of creating a whole community that enables its residents of all ages to live more sustainably. As a walkable, mixed-use community, the development of the Baylands will provide housing and jobs in close proximity to one another as well as to the surrounding urban communities in San Mateo and San Francisco Counties. Facilities such as a proposed center for renewable energy research, a clustering of office and R&D uses, and other planned services and resident businesses will provide green jobs to the region to stimulate the local economy. The connection to existing transit infrastructure will additionally integrate the community into the regional community and economy.

Through the understanding and sensitive expression of Brisbane's ecological, historical and cultural attributes, the Baylands Specific Plan seeks to create a community with its own unique identity rooted in its heritage and cultural composition. Brisbane's pioneering spirit, strong connection to its natural setting and unique industrial heritage – including the old San Francisco railyards – are all contributors to this identity.

While planning and design for the development will facilitate sustainable lifestyles, the realization of environmental benefits, such as minimizing GHGs from driving, water use, and energy use depends on post-occupancy behavior. Coaching towards a sustainable lifestyle may be one opportunity offered to future community members to ensure not only the greatest benefits of resources, but also to realize the full extent of a sustainable community.



High standards of building design will be required throughout the Baylands to ensure energy efficiency and context-sensitive design.



A variety of office and R&D uses will stimulate the local economy, while blending with the natural setting.

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