

AGENDA ITEM
Treasure Island Development Authority
City and County of San Francisco

Agenda Item No: 11

Meeting Date: March 9, 2005

Subject: Presentation of Draft Sustainability Plan (Discussion Item)

Staff Contact: Jack Sylvan, Mayor's Office of Base Reuse and Development

BACKGROUND

The Treasure Island Development Authority is under an Exclusive Negotiating Agreement with a prospective master developer, Treasure Island Community Development, LLC (TICD) for the development of former Naval Station Treasure Island. As part of the exclusive negotiations process, staff is engaged in planning and term sheet-level negotiations on several aspects of the redevelopment project. A key component of the term sheet negotiations is a sustainability plan to guide redevelopment of former Naval Station Treasure Island in a manner that achieves a high level of environmentally sustainable development practices and whose core principles can be integrated into all other aspects of the project. An initial draft of the sustainability plan section of the Term Sheet is included as Exhibit A. Drafting of this document was led by the San Francisco Department of the Environment (SFE) and represents extensive discussions between the SFE, TICD, the Mayor's Office and the Authority.

This sustainability plan was presented to the Treasure Island/Yerba Buena Island Citizen's Advisory Board at its March 1, 2005 meeting.

EXHIBITS

A Draft Sustainability Plan

Presentation to TIDA

Treasure Island Draft Sustainability Plan

March 9, 2005

Introduction

“Rock walls composed of 287,000 tons of quarried rock were sunk in the shoals. Twenty million cubic yards of sea bottom were dredged up and piled within the walls. When the sand was 13 feet above sea level, engineers “unsalted” it by a leaching process. Barges brought 50,000 cubic yards of loam from the mainland to enrich it. When the engineers finished, a 400-acre island, a mile long and two-thirds of a mile wide, had appeared in the Bay. The world’s largest man-made island now has risen from the waves.”

1939 World’s Fair statement on the creation of Treasure Island

We now have a unique and historic opportunity to transform Treasure and portions of Yerba Buena Islands (referred to hereafter as Treasure Island or TI, except when otherwise specified) into an environmentally sustainable urban community. The process of designing and building a sustainable Treasure Island is an overarching core principle that will be integrated into all other aspects of this project. The entire project should have the goal of becoming a model by exhibiting the concepts and practices of sustainable community development.

The City and TICD have expressed strong support for providing sustainable development practices at Treasure Island. This draft Sustainability Plan specifies that environmentally sustainable practices will be integrated as part of the infrastructure and construction throughout the project.

The provisions for sustainable development will be articulated in more detail as this document, and other documents are negotiated by the stakeholders. For example, the Design for Development Agreement will call for certain land use and building requirements that will require the use of sustainable design practices in both the horizontal and vertical components of the project and the Design, Review and Document Approval Procedure for Vertical Improvements (Vertical DRDAP), will call for the use of green building measures and energy efficient utilities by vertical developers.

As the transaction and entitlement process continues, sustainable development practices will be highlighted. Two general areas of development will be considered through the lens of sustainable design practices. First is the horizontal or infrastructure development and land preparation. This part of the development process focuses on land development: deconstructing the old infrastructure systems on Treasure Island (roads, sewers, buildings, etc.), constructing an entirely new infrastructure system and preparing pads for vertical development. Specific implementation for sustainable development on the horizontal development on Treasure Island will have to be compatible with, and contingent upon, environmental regulatory direction, established land use covenants and specific geotechnical conditions. The second area of development is the vertical construction: building the new residences, commercial space and other amenities. Each of these

areas of development will have their own unique features. At this juncture, key concepts which have been discussed include: deconstruction and demolition techniques; hazardous materials remediation; storm water management; decentralized sewage treatment; recycling and composting; energy conservation; provision of renewable energy; land use policies that emphasize strong neighborhoods; walkability and a network of attractive public places; sustainable design practices; creating effective nodes for alternative transportation; and open space planning that minimizes energy and water consumption, encourages native plant usage and promotes biodiversity. Each of these policy issues is discussed below.

This draft Sustainability Plan represents City staff's current analysis of the sustainable design issues that will be part of the future redevelopment of Treasure Island. These issues, and the goals and objectives for responding to them, are subject to change and modification during the negotiations with TICD, and the measures discussed are part of the iterative work of the negotiations with TICD that will require serious analysis of each measure's benefits, feasibility, viability and practicality. As the project is developed in further detail and the project economics become less uncertain, subsequent versions of this Sustainability Plan will incorporate refinements and more specific measures for meeting the goals and objectives outlined herein.

Resource Efficient Infrastructure

Building Statistics

In the United States buildings consume more than 30% of our nation's total energy and 60% of its electricity every year. According the US Department of Energy, buildings generate 49% of sulfur dioxide emissions, 25% of nitrous oxide emissions and 10% of particulate emissions – these numbers are based on conventional building practices that are typically fragmented, oversized, inefficient and unhealthy.

Development of Green Building

Green building, or sustainable building, is changing the way that buildings are designed, built and operated. Green building promotes an integrated approach to design that engages all team members early in the process to create a building that is comprehensive, efficient, and healthy.

In 2000 the US Green Building Council (USGBC) published the LEED (Leadership in Energy and Environmental Design) Green Building Rating System[®] which is a voluntary, consensus-based national standard for developing sustainable buildings. LEED[®] currently has rating systems for the following building sectors: new commercial construction and major renovations (LEED-NC), existing building operations (LEED-EB), commercial interiors (LEED-CI), core and shell (LEED-CS) and is in the process of developing rating systems for homes (LEED-H) and neighborhood Development (LEED-ND). Currently there are over 1,700 buildings in 50 states that are seeking LEED certification and 157 are LEED certified. The numbers that are being reported from these projects are very encouraging: the Swiss Re Tower in London – 50% less energy consumption than a comparable conventional building; the Conde Nast Building at 4 Times Square in New York City – 35 to 40% less energy than a conventional building; the Robert Redford Building in Santa Monica, CA – 60% less water than a conventional building; and the list goes on. Higher productivity, less illness and absenteeism and higher test scores with students are also benefits that are being realized from green building.

USGBC is truly affecting the marketplace as seen by the use and adoption of the LEED rating systems by Federal Agencies, States, Cities, 13 other countries and the private sector. Rick Fedrizzi, president and chief executive of the USGBC says, "The green-building movement really is about understanding the building as an organism and understanding how all the systems play together. We are living in a much different age than we did in the 1970s and '80s, when everything was fast and cheap and quick and glitzy. Now it's about thoughtful construction, safe construction and enduring construction. As green buildings garner more attention, a popular misconception is that they cost more. If you start the process early, with an educated team, you can do it for not a penny more than conventional construction".

Green Building in California

The State of California strongly supports green building as seen by its participation in the development of several of the LEED Rating Systems and the Collaborative for High Performance Schools (CHPS) program and rating system. In addition, the State and Consumer Services Agency has established a Sustainable Building Task Force to develop a strategy to achieve the sustainable building goal found in former Governor Davis' Executive Order D-16-00, and to implement the resulting 10-point plan described in *Building Better Buildings: A Blueprint for Sustainable State Facilities*. In December 2004, Governor Schwarzenegger signed the Sustainable Buildings Executive Order requiring that all new and renovated State buildings achieve a LEED Silver or higher certification and that all State buildings be 20% more energy efficient by 2015, and encouraging the private sector to do the same.

Green Building in San Francisco

In May 2004, San Francisco adopted Chapter 7 of the Environment Code – *Green Building Standards*– requiring all new municipal construction projects to achieve a LEED Silver or higher certification by USGBC. This accomplishment has set San Francisco as a leader among municipalities. The San Francisco Department of the Environment's (SFE) Green Building team oversees the environmental design and performance of all municipal construction projects, chairs the inter-departmental Resource Efficient Building Task Force, develops green building policy, guidelines, tools and training for City design professionals, initiates revisions to building codes to allow for high performance technologies, supports residential and commercial green building efforts, and collaborates with appropriate City departments to ensure that basic infrastructures are developed to support green building in the City.

Treasure Island As a Landmark Green Building Development

The USGBC is in the process of developing the LEED Neighborhood Development (LEED-ND) Rating System. By the first quarter of 2006, USGBC is expecting to make its call for pilot projects for LEED-ND. TIDA staff, SFE staff and TICD have discussed having the proposed project participate in this LEED-ND pilot project effort. The pilot project process involves working closely with USGBC and industry experts to inform the development of the LEED-ND rating system and providing assistance to the Treasure Island development to achieve high levels of economic, environmental and social performance. By agreeing to participate, TIDA, SFE and TICD are all reaffirming their individual and collective commitment to sustainable design and green building development.

Approach for a Sustainable Neighborhood Development

The organizing principles and priority for Sustainable Neighborhood Developments should follow this sequence:

- Integrated Design Process – ensure coordination, synergy and cost savings across disciplines
- Sustainable sites and hydrology – supporting and enhancing existing natural features
- Open Space, landscaping, park lands and natural areas – creating a network of connected parks and natural areas
- Circulation and transportation – pedestrian and transit oriented development
- Land Use– compact development preserving open space and undeveloped areas.

The following sections define these principles and provide supporting information.

Integrated Design Process

GOALS: Initiate an integrated design process involving all stakeholders including owners, project managers, financial officers, architects, engineers, estimators, contractors (or construction managers), facilities managers and end users. Retain a Project Sustainability Coordinator with responsibility for achieving agreed upon environmental goals.

OBJECTIVES: This early coordination of efforts enables synergies and cost savings among disciplines and solving certain problems that cannot be addressed in a more linear process. It allows for more advanced technologies to be considered and provides a building or neighborhood that operates as a comprehensive interactive system. For more information see: <http://www.buildinggreen.com/auth/article.cfm?fileName=131101a.xml>

Horizontal Development

1. Sustainable Sites and Hydrology

A. Erosion and Sedimentation Control

GOALS: Meet LEED-NC[®] Sustainable Sites Prerequisite for Erosion and Sedimentation Control

OBJECTIVES: Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse. Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter. For more information see: [Green Building Compliance Guide for San Francisco Municipal Buildings](#), pages 37-38.

B. Storm Water Management

GOALS: Minimize or eliminate storm water runoff. If possible, eliminate curbs and catch basins. Meet LEED-NC[®] Sustainable Sites—Storm Water Management Credit 2

OBJECTIVES: The project should seek to maintain the hydrologic cycle and shall protect water quality by minimizing disturbances, saving trees, supporting and enhancing natural landforms and drainages, minimizing consumptive water use, utilizing integrated vegetative storm water techniques and pervious paving materials. Where beneficial, the project should seek, to the greatest extent possible, given the environmental regulatory direction and established land use covenants set by state and federal regulators and Treasure Island's unique geological makeup, to allow storm runoff to filter into the ground to help reduce downstream flooding. Carefully planned infiltration swales and basins and measures to reduce impermeable surfaces are generally less costly than the conventional practice of installing storm sewers and building large detention ponds. Examples include: maximizing planted open space, avoiding contiguous impermeable surfaces, minimizing roadway width, incorporating living roofs on buildings, storing roof runoff for later use, and using porous paving materials. For more information see: [Green Building Compliance Guide for San Francisco Municipal Buildings](#), pages 47-49.

GOAL: Reduce or Eliminate Polluted Stormwater Runoff to the Bay

OBJECTIVES: Construct wetlands for storm water treatment. Treatment wetlands can remove a variety of contaminants (including fertilizers, pet waste, crankcase oil, pulverized brake linings) prior to discharge into the Bay. Bodies of water, plants and microbes naturally remove water contaminants. Constructed wetlands-closely mimic natural systems in their operation, harboring diverse, complex ecosystems. By constructing artificial wetlands, we also learn more about the value of *natural* wetlands—and why we need to protect them. Provide a source of recycled water in dry season to maximize aesthetic, ecological and pollutant sequestering values.

Maximize treatment level of polluted runoff. While mechanical liquid/solid separators are considerably better than nothing, they do not remove all pollutants.

C. Innovative Wastewater Technology

GOAL: Use the best available technology for the reuse of sewage and residual stormwater, using these flows as resources rather than waste products.

OBJECTIVES: Replace the existing sewage treatment plant with a decentralized, on-site, state-of-the-art, small-footprint, odor-free plant, integrated into the landscaping that can recycle water for irrigation purposes, treat sewage for disposal without unnecessary costs and can treat storm water to levels appropriate for tertiary uses. Carefully consider alternatives to chlorine and choramine for disinfection, such as ozone and ultra-violet light.

Identify uses for recycled water, including enhancement of the stormwater treatment wetlands, landscaping, etc., and create an appropriate storage and distribution system.

Treasure Island's unique location in the Bay provides an opportunity to both treat sewage in an environmentally appropriate manner and help treat residual storm water as part of the larger wetlands program. By constructing an on-site treatment plant and a constructed storm water treatment wetlands, the comprehensive wastewater management program can function to symbiotically improve water quality and provide a source of recycled water while increasing habitat value and providing educational opportunities.

<http://www.buildinggreen.com/auth/article.cfm?filename-030402a.xml>

2. Open Space and Landscaping

A. Reduced Site Disturbance

GOAL: Protect and restore existing vegetation. Meet LEED-NC[®] Sustainable Sites—Reduced Site Disturbance Credit 5.1

OBJECTIVES: Costs to protect vegetation can be easily recouped through having to spend less on plantings following construction. Large trees significantly boost property values. Protection of shade trees can allow downsizing of air conditioning equipment, because cooling loads can be reduced. For more information see: Green Building Compliance Guide for San Francisco Municipal Buildings, pages 44-47.

B. Water Efficient Landscaping

GOAL: Limit or eliminate potable water use for landscaping. Meet LEED-NC[®] Water Efficiency—Water Efficient Landscaping Credit 1 (both points)

OBJECTIVES: Indigenous landscaping supports wildlife and biodiversity far better than conventional turf. Native landscaping also does not require irrigation and chemical treatments (fertilizer, herbicides, pesticides, etc.). In most cases, it costs less to landscape with native vegetation than to put in lawns and non-native plant species. For more information see: Green Building Compliance Guide for San Francisco Municipal Buildings, pages 53.

C. Integrated Pest Management

GOAL: Minimize pesticide use. Meet LEED-EB Credits 10.4 & 10.5 – Low Environmental Impact Pest Management Policy

OBJECTIVES:

1. Select locally adapted, pest resistant, and/or native plant species for landscape plantings.
2. Use landscape designs and measures that exclude weeds, such as weed cloth, mulches, dense plantings, and mowing strips.
3. Use landscape designs and measures that maintain vigorous plant growth to minimize landscape pest problems, for example, by installing easily maintained, computerized irrigation systems, ensuring proper drainage, and using compost to build soil fertility.

D. Biological Diversity

GOAL: Protect and restore existing natural habitat and wildlife

OBJECTIVES: Identify and map the naturally occurring habitats on Yerba Buena Island and assure their protection from development and inappropriate uses. Remove or control invasive introduced species as necessary to protect natural ecosystems. Utilize the nursery proposed for TI to propagate native species for restoration and re-introduction, specifically, Yerba Buena (*Satureja douglasii*), the island's namesake. Manage the natural areas of YBI in cooperation with the City's Natural Areas Program. Prohibit the use of invasive exotics in the landscaped areas. Consult with the Audubon Society regarding tree trimming and removal, trail placement, and other activities that could impact wildlife.

GOAL: Maximize the natural values of the developed and horticultural portions of the islands.

OBJECTIVES: Use wildlife-friendly plants. Restrict night lighting that could interfere with bird migration.

3. Circulation and Transportation

A. Pedestrian/Bicycle Oriented Development

GOAL: Reduce automobile use for intra-island transportation to the greatest extent possible by the establishment of pedestrian and bicycle friendly land uses and support facilities.

OBJECTIVES: The project should seek to create dense and cohesive neighborhoods (given the site constraints and constraints imposed by other regulatory agencies) that are in close proximity to the key transit nodes, such as that proposed at Pier One. This will allow residents and visitors to walk, bike or ride an on-Island alternative fuel shuttle to basic services, commercial venues, recreational experiences, and other public spaces. The project shall provide sufficient bicycle parking facilities at commercial and transit nodes, as well as a free bicycle program for use by island residents and visitors.

B. Transit Oriented Development

GOAL: Tie development to transit nodes and emphasize transit alternatives and importance of major transit node at Pier One. Meet LEED-NC[®] Sustainable Sites—Alternative Transportation Credit 4.1

OBJECTIVES: The project should seek to reduce pollution and other impacts from automobile use by emphasizing transit alternatives, such as ferries, buses, car share opportunities, organized car pooling, and possibly private water taxi systems and jitneys. Adopt mitigation measures to minimize any significant impacts that may occur to the traffic congestion on and approaching the Bay Bridge. For more information see: Green Building Compliance Guide for San Francisco Municipal Buildings, pages 41-44.

C. Alternative Fuel Vehicles

GOAL One: Require the use of zero emission vehicles by government agencies and encourage their use by businesses and non profits on the island, and provide preferred parking for AFV's.

GOAL Two: Develop alternative fuel infrastructure on Treasure Island to support the use of clean air vehicles, including the production of clean fuels such as bio-diesel and hydrogen and use of electric, bio-diesel, natural gas and hydrogen vehicles.

OBJECTIVES: Reduce pollution and oil dependence by encouraging the use of alternative fuel vehicles. For more information see: Green Building Compliance Guide for San Francisco Municipal Buildings, pages 41-44.

D. Parking Capacity

GOAL One: Discourage automobile use through parking capacity controls and reduced speed limits.

OBJECTIVES: The project should seek to limit parking by implementing standards that are below current minimum planning code requirements for both on- and off-street parking, providing preferred parking for carpools and vanpools, implementing a CarShare program with the necessary car share pod on site and, to the extent feasible, unbundling parking from housing units. Consider bundling transit passes with condo fees and with hotel room fees. For more information see: Green Building Compliance Guide for San Francisco Municipal Buildings, pages 41-44.

E. Promote The Use of Public Transportation

GOAL: Establish comprehensive public transit options as part of a comprehensive Transportation Demand Management program established, implemented and administered by a Treasure Island Transportation Coordination Committee.

OBJECTIVES: Offer a variety of options, including:

- Ferry service to San Francisco, and ultimately to the East Bay
- Upgraded MUNI service to the Transbay Terminal, with some runs continuing to points beyond, especially the Financial District and Civic Center
- New AC Transit service to Oakland transit hub
- Organized ridesharing
- Possible water taxi service
- A coordinated transit hub at Pier One
- On-island transit options making mass transit more efficient and less time consuming
- Minimize the need for transfers by placing most dwelling units within a half-mile walk of the ferry terminal
- Bus and ferry systems that can easily accommodate bicycles

4. Land Use

A. Site Selection

GOAL: Avoid development in areas severely impacted by hazardous materials or set aside for public spaces by the State Lands Commission and the Bay Conservation and Development Commission and reduce environmental impacts from the location of buildings on a site. Meet LEED-NC[®] Sustainable Sites—Site Selection Credit 1

OBJECTIVES: The project should seek to avoid development on portions of sites that are severely impacted by hazardous materials, are designated as public spaces by the State Lands Commission and the Bay Conservation and Development Commission, contain habitat for threatened or endangered species, wetlands, or parklands. For more information see: Green Building Compliance Guide for San Francisco Municipal Buildings, pages 39.

B. Brownfield Redevelopment

GOAL: Achieve maximum cleanup of the toxic substances left by the Navy, as required by State and Federal regulatory agencies.

OBJECTIVES: Work with the Department of Defense and Congress to fund and implement timely and thorough remediation of all toxics, consistent with and to facilitate the building and open space uses proposed in the current development plan.

C. Development Density

GOAL: Density of developed areas shall meet LEED-NC[®] Sustainable Sites—Urban Redevelopment Credit 2.0

OBJECTIVES: The project should seek to cluster development into identified neighborhoods or zones and preserve larger areas of open space, thereby reducing the costs (and environmental impacts) of pavement, sewer lines, utility lines, stormwater system, etc., and making a car-free lifestyle a more viable option. The open space also serves to protect local ecosystems and biodiversity. For more information see: Green Building Compliance Guide for San Francisco Municipal Buildings, pages 68-69.

D. Minimize Paved Area

GOAL: Reduce costs, increase permeability and open space.

OBJECTIVES: The project should seek to minimize the amount of roads, driveways, access roads and parking areas, reduce impervious surfaces, preserve open space, and reduce resource consumption. Also keep streets and driveways as narrow as is practicable, and look for ways to reduce parking requirements. Offer employee and visitor incentives to use public transit. For more information see: Green Building Compliance Guide for San Francisco Municipal Buildings, pages 68-69.

E. Construction Waste Management

GOAL: Divert at least 75% of construction, demolition and land clearing debris from landfill disposal. Meet LEED-NC[®] Materials and Resources—Construction Waste Management Credit 2.2

OBJECTIVES: The project should implement a construction waste management plan. For more information see: [Green Building Compliance Guide for San Francisco Municipal Buildings](#), pages 68-69.

GOAL: Deconstruct all buildings with substantial recoverable materials, as indicated by the survey completed in 1997. Deconstruction will utilize labor from TI associated agencies, specifically the Treasure Island Homeless Development Initiative and Job Corps, with a training element geared to preparing workers for construction employment. Buildings appropriate for demolition will recover resources on-site for use on island to the greatest degree possible.

OBJECTIVES: This can include stockpiling and grinding of inerts and organics for reuse and batching into necessary construction and landscaping materials.

F. Infrastructure

GOAL: Select sites that require minimal extension of the area to be served by infrastructure.

OBJECTIVES: Where roadways, water, sewer, and utility lines require minimal extension, the infrastructure costs of development can be significantly reduced - while the environmental impacts of development are reduced and more pristine, undeveloped land is preserved.

G. Solar Orientation

GOAL: Use appropriate street alignment or width and development patterns to reduce shading and maximize solar energy potential for all buildings.

OBJECTIVES: The project shall make every effort to align building shape, height and orientation to utilize natural energy flows. Proper street and lot layout enable energy efficiency, human comfort and renewable energy production in the built environment. For more information see:
<http://www.buildinggreen.com/search/index.cfm?q=passive+solar&x=11&y=7>

Vertical Development

A. Building Reuse

GOAL: For historic buildings, the gym, and the school, maintain at least 75% of existing code-compliant building structures and shell (exterior skin and framing, excluding window assemblies and nonstructural roofing material) subject to

regulatory constraints such as the U.S. Department of Interior standards for historic structures. Meet LEED-NC[®] Materials and Resources—Building Reuse Credit 1.1

OBJECTIVES: Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

B. New Commercial Buildings

GOAL: Require that all new commercial buildings achieve, at a minimum, a LEED-NC[®] Silver certification level from the U.S Green Building Council (USGBC), with a stated goal of achieving LEED NC Gold certification as more specific information is available regarding the commercial component of the project.

OBJECTIVES: LEED for New Construction and Major Renovations (LEED-NC) is a green building rating system that was designed to guide and distinguish high-performance commercial and institutional projects. For more information see:
<http://www.usgbc.org/LEED/publications.asp>

GOAL: Incorporate pest prevention as a design and maintenance objective for new commercial buildings. Meet LEED-EB Credits 10.4 & 10.5 – Low Environmental Impact Pest Management Policy

OBJECTIVES:

- a. *Design to exclude pests from new buildings*, using design features such as single-pour slabs, sealing of pipe breaks, sand barriers beneath foundations, sealed wall cavities, injection of boric acid into wall voids, installation of door sweeps, and appropriately screened foundations, attic vents, and windows.
- b. *Design to reduce potential pest harborage* in or near new buildings, using features such as bird-repellent roof designs, removal of all cellulose-containing materials from building sites, use of wall coverings that do not provide insect harborages (i.e., avoid pegboard), and keeping vegetation (such as ivy) at least three feet away from buildings.
- c. *Design to improve moisture management in new buildings*, using features such as moisture barriers beneath foundations, adequate ventilation, and appropriate drainage near foundations.
- d. *Design to facilitate inspection and maintenance* in new buildings, for example, by designing-in easy access to foundations and to pipe breaks in foundations, building-in access to areas covered by suspended ceilings, and by building for easy sanitation by:
 - i. designing floors and shelves for easy cleaning
 - ii. elevating dumpsters
 - iii. including coves at wall/floor junctures to prevent accumulation of debris, and sloping kitchen and bathroom floors for easy drainage.

C. Tenant Improvements—Commercial Buildings

GOAL: Require that all tenant improvements in new commercial buildings achieve, at a minimum, a LEED-CI[®] Silver certification level from the U.S Green Building Council (USGBC), with a stated goal of achieving LEED-CI Gold certification as

more specific information is available regarding the commercial component of the project.

OBJECTIVES: LEED for Commercial Interiors (LEED-CI) addresses the specifics of tenant spaces in office, retail, and institutional buildings. LEED-CI is part of a comprehensive suite of LEED green building rating tools developed by USGBC to promote green design, construction, and operations practices in buildings nationwide. For more information see: http://www.usgbc.org/LEED/leed_interiors.asp

Hotels should be managed as “green hotels” where, for example, sheets and towels are exchanged only on request, soaps and toiletries are biodegradable, and lighting is automatically controlled.

D. Residential Buildings

GOAL: Require that new housing units and renovated permanent housing units (units that have an anticipated life span of more than 10 years) be subject to a high level sustainability goal that will be determined at the time the Disposition and Development Agreement is completed, through agreement between the Department of the Environment and the other stakeholders involved in the project. The priority would be using one of the high level standards adopted by the US Green Building Council, which will be presenting the Leadership in Energy and Environmental Design rating system for homes in 2007.

OBJECTIVES: The State of California, in collaboration with *Bay Area Build it Green*, a coalition of local government representatives, environmental groups, homebuilders, and product manufacturers is developing a state-wide residential green building rating system. It is expected that city and county municipalities will then adopt these guidelines to encourage or require that residential developers and homebuilders achieve certain environmental performance measures in their residential building projects.

GOAL: Incorporate pest prevention as a design and maintenance objective for new residential buildings. Meet LEED-EB Credits 10.4 & 10.5 – Low Environmental Impact Pest Management Policy

OBJECTIVES:

- a. *Design to exclude pests from new buildings*, using design features such as single-pour slabs, sealing of pipe breaks, sand barriers beneath foundations, sealed wall cavities, injection of boric acid into wall voids, installation of door sweeps, and appropriately screened foundations, attic vents, and windows.
- b. *Design to reduce potential pest harborage* in or near new buildings, using features such as bird-repellent roof designs, removal of all cellulose-containing materials from building sites, use of wall coverings that do not provide insect harborages (i.e., avoid pegboard), and keeping vegetation (such as ivy) at least three feet away from buildings.
- c. *Design to improve moisture management in new buildings*, using features such as moisture barriers beneath foundations, adequate ventilation, and appropriate drainage near foundations.

- d. *Design to facilitate inspection and maintenance* in new buildings, for example, by designing-in easy access to foundations and to pipe breaks in foundations, building-in access to areas covered by suspended ceilings, and by building for easy sanitation by:
 - i. designing floors and shelves for easy cleaning
 - ii. elevating dumpsters
 - iii. including coves at wall/floor junctures to prevent accumulation of debris, and sloping kitchen and bathroom floors for easy drainage.

E. Waste Prevention and Recycling

GOAL: Achieve the City's solid waste diversion goal of 75% by 2010

OBJECTIVES: Waste prevention, reuse, recycling and composting are important techniques that will be utilized to meet the City's goals of resource conservation and create a sustainable, livable community for TI: public, private, recreational, commercial and residential. Waste prevention, recycling and composting objectives include:

- Placement of standard trash and recycling receptacles at strategic locations along main thoroughfares, at mass transit stops, and at parks and open spaces including the marina.
- Creating an effective recycling program in all public, commercial and residential spaces.
- Establishing a composting collection program for public, commercial and residential uses. Composting will take place on-Island, likely in conjunction with the Urban Garden planned for Treasure Island.
- The project will include community and managed garden spaces for resource regeneration, composting opportunities and landscaping sustainability.
- A sustainability center will be developed, to promote waste reduction and other sustainable practices, and facilitate durable item reuse. The Sustainability Coordinator will provide education, reinforcement and follow-up to make sure the recycling program is being implemented properly.

F. Energy

GOAL: Minimize the island's electricity demand by reducing energy consumption and explore generating power on-site.

OBJECTIVES: The project should seek to reduce energy consumption and generate power through the following methods:

- Develop the electrical distribution system as a distributed energy system to enable all of the power need being met with local distributed generation systems.
- Install one centralized energy monitoring and reporting system for the entire development at the building level
- Exceed California Title 24 standards for all buildings by at least 20%
- Mandate for all buildings Energy Star appliances and equipment, premium efficiency motors, demand response capability, and LED for all lit signage
- Use high efficiency lighting strategies for walkways, streets, signage, and other outdoor lighting
- Design all outdoor lighting to protect the darkness of the night sky

- Perform a feasibility study of a district heating and/or cooling system that may utilize cogeneration and/or ground or water source heat pumps.
- Use active and passive solar energy systems to minimize demand for electricity and natural gas as well as generate electricity to the maximum amount feasible
- Enable and protect solar access through the design of streets, parcels, and buildings
- Perform a feasibility study on the viability of on-site generation of energy, with a goal of generating a minimum of 20% of Treasure Island's peak demand from on-site renewable energy sources
- With CCSF (including SF PUC), perform a feasibility and bird safety study of a wind farm to provide electric power for the development

Innovation LEED-ND[®] Pilot Project

GOAL: TICD shall become a member of USGBC, help to influence the development of a national rating system for neighborhood developments (LEED-ND[®]), and make application for the Treasure Island Development to become a LEED-ND Pilot Project. Pilot Project applications will be accepted in the first quarter of 2006, and a balloted rating system is projected for launch in 2007. This is an opportunity for TICD to obtain professional consulting expertise from leaders in the field, learn best practices from other pilot project developments and to help create the new national rating system. LEED Pilot Projects garner national and international attention as world leaders with innovative, cutting edge developments.

OBJECTIVES: The U.S. Green Building Council is developing a national standard for neighborhood design that integrates the principles of green building and smart growth. The goal of this partnership is to engage stakeholders across the country in establishing consensus-based standards for assessing the impacts of development projects using the rating framework of the LEED (Leadership in Energy and Environmental Design) Green Building Rating System™ that has already become the national standard for high performance buildings.

Whereas other LEED products focus primarily on green building practices, with only a few credits regarding site selection, LEED for Neighborhood Developments (LEED-ND) would emphasize smart growth aspects of development while still incorporating a selection of the most important green building practices. The scope of what would be considered smart growth design would be guided by the Smart Growth Network's ten principles of smart growth, and would include density, proximity to transit, mixed use, mixed housing type, and pedestrian- and bicycle- friendly design. LEED-ND would then provide an objective basis on which to certify developments as smart growth. In short, LEED-ND would create a label, as well as a set of guidelines for decision-making, which could serve as a concrete signal of, and incentive for, better location, design, and construction of neighborhoods and buildings. Equally important, it will be a product that can be readily folded into USGBC's existing and successful efforts to market LEED to developers, consumers, and policymakers.

The existing LEED Rating System for New Commercial Construction (LEED-NC) has a proven track record of encouraging builders to utilize green building practices such as increasing energy and water efficiency and improving indoor air quality in buildings. LEED-ND can have a similarly positive effect on development trends to revitalize existing urban

areas, decrease land consumption, decrease vehicle miles traveled, improve air quality, decrease polluted stormwater runoff, and build communities where people of a variety of income levels can coexist, and where jobs and services are accessible by foot or transit. The continued use of certain green building standards in LEED-ND will ensure that indoor air quality is healthier, that energy and water consumption decrease, and that the corresponding utility bills of tenants and residents decrease as well.

In addition to direct economic and quality-of-life benefits for consumers, the implementation of water and energy efficient technologies will ensure a more efficient use of infrastructure in urban areas, where water, sewer, and electric grid systems are likely to be overtaxed. For additional information on LEED-ND, contact the USGBC at leedinfo@usgbc.org

Costs and Benefits of Green Building and Sustainable Community Design

Some cost and benefit data is included in the above sections that refer to individual green building and sustainable community design strategies. However, true sustainable design is not so much a collection of technologies, as an integration of human development into natural ecosystems. This integration is most easily achieved through an integrated design process where all design professionals and project stakeholders set environmental goals and collaborate from the very beginning of the design. While there may indeed be some additional “soft costs” (upfront design costs) associated with this alternative to traditional design procedures, most truly integrated designs do not require additional capital costs to achieve high levels of environmental performance. These advanced designs result in large life-cycle savings in faster rent-up and sales, less turnover, happier and healthier tenants and more profitable owners with reduced operating costs and maintenance. The integrated design process allows for synergies and opportunities for cost savings among disciplines that cannot be achieved in a more linear process.

Please find the following reference for cost and benefit information included as an attachment to this document:

Report to Board of Supervisors Budget Analyst—Environment Code—Chapter 7—Resource Efficiency Requirements and Green Building Standards, February 26, 2004, SF Environment

Additional Reference

The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force, "finds that an upfront investment of less than two percent of construction costs yields life cycle savings of over ten times the initial investment."

- [Final Report](#) (Adobe* PDF, 3.1 MB)
- [Executive Summary](#) (Adobe PDF, 174 KB)

See Also:

- [Actual Costs—Is Building Green Too Expensive?](#)—*Building Green in a Black and White World. Section 2; Chapter 3; Part 3.*
- [Building Green on a Budget](#)—*Environmental Building News (EBN) Volume 8, No. 5 -- May 1999*
- [Buildings and Life-Cycle Costing](#)—*Canadian Building Digest*
- [Costing Green: A Comprehensive Cost Database and Budgeting Methodology](#)- (Adobe PDF, 268 KB) Lisa Fay Matthiessen and Peter Morris of Davis Langdon Adamson (DLA)
- [Economic Benefits of Green Building Design](#)—(Power Point presentation)
- [General Services Agency LEED Cost Study](#)-The report provides a review of both the hard cost and soft cost implications of achieving Certified, Silver, and Gold LEED ratings for two GSA building types, using GSA's established design standards as the point of comparison.
- [Green Building Saves Money](#)—*Wisconsin Green Building Alliance (WGBA)*
- [Managing the Cost of Green Buildings](#)--(Adobe PDF, 371 KB) [Abstract](#) (Adobe PDF, 215 KB)
- [Sustainable Practices, Public Buildings, and Jobs](#)—*Portland State University Publication*
- [What Every State Executive Should Know About Sustainable Buildings](#)—(Power Point presentation)