M1 Reuse existing buildings where feasible
Over 16 buildings located on Treasure Island and Yerba Buena Island have been deemed to be historically significant and are eligible for listing in the Register of National Historic Places. These buildings, which total about 350,000 square feet, will be restored for adaptive reuse. Retrofitting historic buildings will be done in compliance with the Secretary of the Interior’s Standards for Rehabilitation and local historic preservation commission guidelines.

M2 Procure materials from local and regional sources
Sourcing materials locally helps to reduce the significant transportation-related emissions associated with the distribution and shipping of goods and materials. A target of 20% has been established for the percentage of materials that need to be sourced from within 500 miles of San Francisco, if reasonably possible, as part of the design guidelines.

The use of regionally manufactured products and materials should support and strengthen the local economy and reduce transportation costs and the associated environmental impacts. For materials that cannot be sourced locally, a baseline radius from the site will be established to obtain materials from the site. The development should require identification of regionally manufactured materials, and shall develop guidelines for incorporation into performance specifications.

M3 Use high recycled content materials, renewable materials, or environmentally preferable materials
A project goal is 10% of building materials to be comprised of recycled content. Material suppliers will be identified that can help to

High-End Targets
• Source 20% of the building materials locally (within 1000 miles if reasonably possible)
• Source 10% of the building materials using recycled content
• Use materials with low or no volatile organic compound (VOC) levels
• Provide incentives for use of SFC-certified sustainable harvested wood products.

Benefits
• Reduced embodied energy
• Reduced related emissions
• Reduce demand for virgin materials
• Reduce environmental impacts associated with extracting, harvesting and manufacturing virgin materials

Frameworks supported
• LEED™ ND
• Urban Environmental Accords
• City Sustainability Plan
• Healthy Development Tool
achieve this goal. The recycled content materials must perform equally or better than virgin materials in terms of strength, maintenance requirements and durability. The reuse of building materials will be encouraged. Many commonly available products that have recycled content include metals, concrete, masonry, acoustic tile, carpet, ceramic tile and insulation.

A database will be developed for commonly used recycled content materials, and guidelines for incorporation into specifications will be developed during the design phase.

use environmentally appropriate materials

The recycled content standards for building related materials listed in EPA’s comprehensive procurement guideline will be used as the benchmark. Some of the products listed as recommendations in this guideline are cellulose loose fill, rockwool and polyisocyanurate rigid foam.

There are a number of environmentally-preferable materials that can be used in construction for both the horizontal and vertical development. A target for materials will be established as part of the design guidelines. In addition, as discussed in the air quality section, healthy materials that do not impact indoor air quality, will be given preference.

Selected materials will be evaluated with respect to their embodied energy by performing a life cycle assessment of their properties.

M4 Minimize the use of toxic materials where feasible

Performance specifications will be developed to reduce or eliminate the use of materials that have potential for indoor air contamination. Those materials that are odorous, emit contaminants or off-gas, and are therefore potentially irritating and harmful to the comfort and well being of installers and occupants will be specifically limited.

All adhesives and sealants used in the interior of buildings will comply with the South Coast Air Quality Management District (SCAQMD) Rule #1168.

Paints and coatings applied to the interior walls and ceilings will meet the VOC levels prescribed by Green Seal standards.

All carpet installed in the building will meet the testing and product requirements of the Carpet and Rug Institute’s Green Label Plus program.

Composite wood and agrifiber products used on the interior of the building will contain no added urea formaldehyde resins. Laminating adhesives used to fabricate on-site and shop applied composite wood and agrifiber assemblies shall contain no added urea-formaldehyde resins.

Key delivery partners

- CIWMB
- Eco-suppliers
- Local historic preservation commission
- SFE
Health, Safety & Security

Goal
Safeguard the health and welfare of the community and address physical risks in a proactive manner.

Strategies
H1. Remediate or avoid development in contaminated areas
H2. Protect against seismic, flooding and climate change risks
H3. Provide adequate emergency support services
H4. Promote healthy air quality
Existing Conditions

Treasure Island faces a number of physical hazards and risks, including hazardous material contamination, rise in sea levels due to climate change, and liquefaction, lateral movement and settlement due to earthquake.

Environmental Contamination

As a remnant of its military history, there are various contamination sites spread throughout Treasure Island. Soil contamination is related to former military activities including, fuel storage and fueling operations, previous fire training activities, aboveground storage tanks and underground storage tanks (UST’s), petroleum pipelines, disposal areas, ammunition storage areas, a skeet range, miscellaneous storage areas, and former laundry, dry cleaning, and x-ray development activities. The soil beneath the on- and off-ramps to the Bay Bridge is contaminated with lead from lead-based paint. Some hazardous wastes also may have been discharged to San Francisco Bay via the stormwater system. In addition, the groundwater at Treasure Island has been affected.

As part of the closure of the former Naval Station Treasure Island (NSTI), the U.S. Navy has primary responsibility for hazardous materials remediation. Environmental investigations and cleanup began on NSTI in the mid-1980s and continues today. The Navy’s remediation efforts consists of two programs: the CERCLA Program and the Petroleum Program. In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), remedial actions or removal actions must be undertaken for each site, based on an analysis of the alternatives that best protect human health and the environment in a cost-effective manner. The Navy has identified 18 CERCLA sites on TI and 5 on YBI (see Figure 28). Six sites have been closed, two sites had interim removal actions conducted and these two sites, plus the remaining 15 CERCLA sites, are continuing through the remedial action process. Under the Petroleum Program, 9 petroleum sites have been identified along with numerous USTs and fuel lines throughout TI and YBI. Four petroleum sites have been closed and the remainder are being investigated and/or remediated or are in the closure process. About 95% of the petroleum contamination has been addressed.

The City has been working with CH2M HILL and Geomatrix to monitor and assess the Navy’s clean up work to date. The Navy has ongoing plans for additional cleanup in the future. These remedial actions are designed to protect human health and the environment on the basis of the land use redevelopment scenario from the 1996 Draft Reuse Plan.

Geotechnical Issues & Seismic Risks

Treasure Island faces significant liquefaction risks due to the fill materials used for its construction and the manner in which the fill was placed. The Island was built in the mid-1930s by placing about 30-million cubic yards of sand material, 30 to 40-feet deep over an existing, compressible material,
Figure 25

Base Image Source: SOM
High-End Targets

- Remediate to state and federal standards for human health and the environment consistent with new land use plan
- Stabilize TI shoreline perimeter
- Regrade TI to account for 2050 sea level rise, 100 year tide elevation and Bay Mud Settlement
- Develop Emergency Preparedness & Response Plan
- Establish Air Quality Index for TI/YBI

Benefits

- Improved health and safety
- Significant reduction in risk from physical hazards
- Ability to address emergencies if they arise

Frameworks supported

- LEED® ND
- Urban Environmental Accords
- City Sustainability Plan
- Healthy Development Tool

commonly known as Bay Mud. The combination of the sand fill material and high groundwater creates the potential for “liquefaction” during a large seismic event. Liquefaction occurs when a saturated sand formation loses structural strength and behaves like a liquid, as a result of an earthquake. The result is immediate settlement and lateral movement of the sand material. Analysis undertaken by Treadwell & Rollo indicated that the preliminary predictions of lateral movement range from 0 to 10-feet, while preliminary predictions of settlement range from 0 to 2-feet. The magnitudes of these movements could damage buildings, utilities, and hardscaped areas across the Island, and will require significant mitigation measures.

Air Quality

With respect to air quality issues, at present there are various sources of air pollutants on Treasure Island, including emissions from stationary sources (such as boilers, fuel storage tanks, and the wastewater treatment facility) and mobile sources (such as vehicles, lawn maintenance equipment, and ships). About 82% of stationary sources are covered by permits under the Bay Area Air Quality Management District (BAAQMD). There is no independent monitoring of air quality on TI - air quality data are collected as part of San Francisco’s city-wide monitoring program.

Strategies

Creating a safe, healthy, and secure environment for future residents, businesses, visitors and employees is of paramount importance to the successful redevelopment of Treasure Island. Recognizing the different risks to the health, safety and security of Treasure Island residents, extensive efforts will be undertaken to protect residents and reduce the likelihood and impact of these physical threats. These measures include remediation of contaminated sites prior to development, undertaking physical measures to protect against earthquake risks, developing adequate emergency response plans, and addressing air quality impacts.
**H1 RemEDIATE or AVOID development in contaminated areas**

The new land use plan has been sited intentionally to limit development in areas that require remediation and in particular those areas affected by groundwater contamination. The Navy’s current remediation program is generally designed to permit the ranges of uses outlined in the 1996 Reuse Plan. To the extent the proposed land use plan differs from the 1996 Reuse Plan, if the Navy’s remediation program does not address the full range of clean-up activities necessary to implement the proposed plan, the additional remediation costs will need to be borne by the project. The estimated cost for these additional remediation efforts to be undertaken is estimated at $28 million. These additional remediation efforts include such items as contamination beneath existing building footprints, and asbestos and lead-based paint in commercial buildings. In addition, Contractor Health and Safety Plans and Soil Management Plans will need to be developed to address the possibility of encountering additional contamination during construction.

The final remedy selection for various areas subject to remediation will be made as part of a program outlined in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLA establishes a phased process for investigating and cleaning up hazardous waste and disposal sites that evaluates a range of remediation alternatives and selects the one that best protects human health and the environment in a cost-effective manner. The Navy, the various regulatory agencies, the City of San Francisco, and TICD are committed to a transparent process for ensuring that remediation is conducted to levels appropriate for the proposed land uses.

**H2 Protect TI against seismic, climate change and flooding risks**

A number of measures are being undertaken to prevent and mitigate against the risks of earthquake-induced settlement and lateral movement. These measures address the perimeter of the island, the grading and drainage of the interior, the specification of proper building foundations and the strengthening of vital utility and access corridors (see Figure 29). In addition, these same measures will also provide added protection to Treasure Island against risks of tsunami and sea level rise due to climate change.

To mitigate the risk of lateral spreading of the island mass during a large seismic event, a 50-foot wide zone along the entire perimeter of Treasure Island will be strengthened and stabilized using a combination of stone columns, soil-cement columns and earthquake drains. The levee elevation will provide approximately 7.5-feet (2.25 m) of freeboard over normal high tides. Based on historical data over the last 100 years, this amount of freeboard should be sufficient to also protect the Island from Tsunami events.

The viaduct structure and causeway connecting TI, YBI, and the Bay Bridge will also be seismically retrofitted. This connection is of vital importance as it serves as the primary vehicular access route and contains the utility mains for water and telecommunications serving the island.

The proposed grading and drainage for the development will be guided by a combination of the 100-year high tide, adjustments for anticipated sea-level rise due to climate change, and anticipated settlement due to Bay Mud.

**SEA LEVEL RISE IN CALIFORNIA**

Studies on the impacts of climate change in California estimate that sea levels could rise anywhere from 4 inches to about 31 inches over a hundred year period. Dramatic increases in sea levels would put a significant number of coastal cities, including San Francisco, at great risk.

Sea level rise is a global problem that needs to be addressed at the local, regional and national level. While the proposed levee elevation at Treasure Island is higher than customary levee protections in the Bay Area, the risks of climate change affect the entire Bay Area. The City of San Francisco and State of California will need to address this issue in a proactive manner and develop appropriate mitigation strategies. The City has already taken the first steps in this matter by developing a Climate Change Action Plan to address the root causes of global warming.
Buildings on piles or equivalent foundations to mitigate liquefaction-induced settlement
Bay mud depth greater than 30 feet
Entire island fill material has some potential for liquefaction
Perimeter levee raised to account for 2050 sea level rise, 100 year tide and Bay Mud settlement
Shoreline perimeter stabilization to mitigate lateral spreading
Hardened utility corridors to mitigate differential settlement
Causeway stabilization and hardened utility corridor
Building 1 seismic upgrade
According to EPA estimates, there is a 50% chance that sea levels will rise about 4-inches by 2025 and about 8-inches by 2050. The base flood elevation criterion utilized for development on the Island will be adjusted for an 8 inch rise in sea levels, the 100-year tide elevation and allowance for 12 inches of anticipated settlement due to Bay Mud. In order to protect structures from flooding, the finished floors of the buildings will be set approximately 1 foot above the base flood elevation. In addition, the height of the perimeter levee will be increased during construction of the perimeter stabilization to provide further protection against storm surges. The finished elevation of the perimeter levee also provides approximately 3 feet of protection against unanticipated sea level rise above the 100-year high tide level.

Buildings will be protected from seismic-induced liquefaction and differential settlement by building on appropriate foundations. It is expected that most of the buildings will be supported on deep piles.

The backbone of utility systems on Treasure Island and the causeway between Treasure Island and Yerba Buena Island will be placed within hardened joint trenches placed underneath the streets that will be engineered and constructed to enable the utility systems and the street pavements to withstand a major seismic event. The joint trenches along such “hardened corridors” will be built on a foundation of stone columns that will be resistant to liquefaction and large differential settlements. Utility pipes will be constructed of ductile materials wherever appropriate and flexible connections will be specified for all joints where significant differential settlement is expected.

**H3 Provide adequate emergency support services**

Given its vulnerable position in the middle of the San Francisco Bay, it is important that emergency planning be undertaken to address the unique risks faced by Treasure Island, and provide comfort to future residents and workers that emergency plans have been put into place. The Mayor’s Office of Emergency Services and Homeland Security (OES/HS) is leading the effort to develop an Emergency Preparedness and Response Plan in coordination with TICD, TIDA, the San Francisco Police Department, the San Francisco Fire Department, the San Francisco Bay Area Water Transit Authority, and the U.S. Coast Guard. A plan will be developed for the initial stages of the development and later for the full build out. The plan is expected to include the following:

- **Preparedness Efforts**
  - Create an on-island SFFD Neighborhood Emergency Response Team
  - Evaluate and plan for vulnerabilities unique to Treasure Island
  - Establish a Crisis Action Team
  - Establish a 72 Hour preparedness supply area
  - Establish a Treasure Island Department Operations Center
  - Identify sites for Emergency Shelters
  - Undertake 72 hour preparedness awareness campaign

- **Response Mechanisms**
  - Construct a new joint police and fire substation
  - Establish outdoor emergency warning systems
  - Connect to community alert network (telephone notification system)
  - Provide at least two city-owned telephone switches connected with the public telephone system
  - Link to Mayor’s Emergency Telephone System
  - Develop emergency transport medical care plans via air and water routes
  - Develop evacuation plan

**H4 Promote healthy air quality**

The impacts on air quality from the redevelopment plans will be analyzed as part of the forthcoming environmental review process. It is recognized that air quality is likely to be impacted at Treasure Island due to an increase in transportation-related emissions, in the short-term from construction work and in the long-term, from travel by residents and visitors. However, through an integrated transportation and land-use plan that promotes
walking and biking for on-island trips, and public transit for the off-island commute, mobile sources of pollutants and emissions can be reduced. In addition, the use of electric or alternative fuel vehicles will help to reduce the pollutants associated with the transportation system. Finally, the transformation of nearly 50% of Treasure Island into open space will help to reduce pollutants in the air. Trees can help to sequester pollutants from the atmosphere, including nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), carbon monoxide (CO), and particulate matter of ten microns or less (PM₁₀).

The City will work with the Bay Area Air Quality Management District (BAAQMD) to establish an Air Quality Index for TI. Targets for air pollutant and greenhouse gas emissions will be set against a baseline once TI has been redeveloped.

Key delivery partners
- Bay Area Air Quality Management District
- Bay Area Water Transit Authority
- Mayor’s Office of Emergency Services
- San Francisco Department of Emergency Communications
- San Francisco Fire Department
- San Francisco Police Department
- US Coast Guard
Community & Society

**Goal**

*Foster the development of a strong, self-sufficient, diverse community that has access to ample opportunities for recreation, arts and education, and undertake the redevelopment through a process built on transparency and public participation.*

**Strategies**

CS1. Provide services and amenities that enable a complete, self-sufficient community to develop

CS2. Create a diverse community that appeals to people of different income levels, ages, life stages, and backgrounds

CS3. Provide recreational and public facilities for the enjoyment of the community

CS4. Integrate the development with the existing Job Corps program

CS5. Enrich the community through arts, culture and education

CS6. Actively engage the community and stakeholders during the redevelopment process
Historically, the community on TI/YBI has been physically, socially, and economically isolated from the rest of San Francisco. During operating conditions, the base had 4,500 residents in 1990 and the resident population is currently estimated to be approximately 3,000. As an operating Naval facility, Treasure Island featured a skating rink, movie theater, and bowling alley; these uses were closed at the time of operational closure and the other buildings have been abandoned. Recently, the elementary school was closed due to low enrollment, however, the Delancey Street Life Learning Academy, a charter high school, continues to operate on the Island. While residents have access to some services including police, fire and rescue, and childcare, there is no supermarket, post office, pharmacy, bank, or gas station on the island and few options for arts and culture, education. On the positive side, there are a variety of community supportive services on Treasure Island targeted for homeless and disadvantaged San Franciscans (see Figure 30).

**Strategies**

Treasure Island and Yerba Buena Island will be transformed into a strong, diverse community with a mix of families, youth, seniors, and singles from different income levels. Residents will be able to access a wide variety of recreational, arts, educational, and other services. Through careful land use planning, the island will be designed to meet the needs of all its residents to ensure a strong, independent community. In addition, care will be taken to integrate the development with the existing Job Corps site on Treasure Island. A vast number of community facilities and amenities are projected at build-out—these are summarized in the box on the right.

The strategies listed below discuss how these goals for the Island are to be achieved. They are largely reflected in the Community Facilities Plan but require the participation of many different parties and stakeholders.

**CS1 Provide services and amenities that enable a complete, self-sufficient community to develop**

A key aim of the redevelopment effort is to enable TI/YBI to become a thriving, self-sufficient community. Although Treasure Island is connected to the mainland of San Francisco, its residents should not have to leave the island to access essential services. The extent to which residents can meet their basic needs on Treasure Island itself plays an important role in helping the project minimize its carbon footprint.

A number of essential services and neighborhood-retail is planned to be established on the Island. The
High-End Targets

- 20% family-friendly housing
- 25,000 square feet of community service space (including community center, reading room, senior services, youth center, and child-care)
- 45,000 square feet of neighborhood-serving retail

Benefits

- Establishment of vibrant, independent, self-sufficient community
- Needs of various ages and lifestyles addressed
- Cultural and educational enrichment and recreational opportunities for all

Frameworks supported

- Urban Environmental Accords
- LEED™ ND
- City Sustainability Plan
- Healthy Development Tool

SUMMARY OF COMMUNITY FACILITIES

Community Spaces
- Community center
- Neighborhood reading room/library & computer center
- Senior/adult services
- Youth center
- Community performance space/clipper cove plaza
- TIHDI activities space
- Transportation coordinator office

Community services and amenities
- Building one adaptive reuse for community amenities
- Neighborhood retail/services at urban core
- Community information boards
- Health and wellness facilities
- Community gardens

Educational facilities
- Treasure Island school & Life Learning Academy
- Center-based and family-based child care
- Educational education center
- Treasure Island museum
- Art Park
- Urban farm

Open space and recreational facilities
- Great Park on Treasure Island
- Regional sports/recreation facility and ball fields
- Neighborhood parks and playgrounds
- Pedestrian/bicycle shoreline promenade (SF bay trail)
- Outdoor sports courts
- Beach at clipper cove
- YBI hiking trails and hilltop park
- Sailing center and sailboarding launches
- Marina and ferry quay pedestrian piers
- Wind screen, covered walk and bus canopy
- Bike parking structure and kiosk
- Cityside park information center
- Warming hut

retail component of the land use plan includes approximately 45,000 square feet of neighborhood servicing retail conveniently located at the ferry terminal in the heart of the community. Retail services are expected to include a grocery store, and may include additional local serving uses such as a pharmacy, bank, wet cleaners, post office, health and beauty services, etc., as well as cafes, restaurants, shops and entertainment. In addition, medical and dental services will be encouraged to locate on the island. The former Treasure Island School will be reopened. Together with the currently operating Life Learning Academy, these educational opportunities will ensure the Island is a place that also meets the needs of families with children. Childcare facilities will be established to serve children of the residents and, potentially, employees. Finally, a new combined fire and police station has been proposed to address local emergencies.

CS2 Create a diverse community that appeals to people of different income levels, ages and lifestyles

Treasure Island and Yerba Buena Island are expected to become a diverse community that is home to people of different income groups, ages and lifestyles. A typical neighborhood will be made up of four or five small walkable blocks with low-rise to mid-rise housing, accommodating a variety of unit types, including affordable homes, and range of household types and age groups. There will be a mix of housing types, including low-rise, mid-rise, and high-rise.

The islands will be promoted as a place that welcomes and meets the needs of families and children. It is estimated that 19% of future households on TI/YBI will be young families (those with children ranging from 1-7 years), 16% will be
more established families (those with children ranging from 8-18 years), 33% will be older generations and 33% will be young workers or singles (in comparison, about 50% of San Francisco households are young workers or singles 33% are older generations and a total of 14% are households with children). Children under 18 are expected to represent 21% of the population while adults over 64 are expected to represent 10% of the population. The proposed development includes a range of community facilities, amenities and services to serve the needs of families, individuals and couples, visitors and workers and the young, old and those in between. There will be a community center for community functions and events, as well as neighborhood community rooms with flexible uses and a reading room/library. Families will have access to daycare, a school, youth and activity centers, and outdoor recreation, including neighborhood parks and sports fields. The organic farm and of a safe and comfortable setting for walking, biking and community events. Finally, older members of the Treasure Island community will be able to access drop-in senior centers and multi-age group community facilities to promote a healthy lifestyle, and access to active and passive recreation and open space opportunities.

TI/YBI will also be a place that welcomes residents of all income levels. The affordable housing plan calls for 30% of all units to be affordable for very low, low and moderate income residents, including singles, seniors and formerly homeless individuals. Treasure Island Homeless Development Initiative (“TIHDI”) will continue its role in supporting the transition of the formerly homeless population.

This broad mix of housing types, incomes, ages and lifestyles will help to ensure that a diverse community will prosper and grow as Treasure Island becomes a vibrant new neighborhood in San Francisco.

**nearly 200 acres of parks, recreation and green space**

environmental education center will provide opportunities for residents to learn firsthand about sustainable agriculture and sustainable development. Families of all incomes who choose Treasure Island living will find community access to transportation options and assistance, community spaces, environmental education, arts and performance opportunities, extensive sports programs and the extraordinary comfort and freedom

**CS3 Provide recreational and public facilities for the enjoyment of the community**

A vast variety of sports and recreational areas, public spaces, open spaces and parks will be established to provide residents and visitors alike the opportunity for leisure and relaxation. There will be approximately 300 acres of parks, public and open space across TI and YBI including a fully accessible shoreline. Proposed recreational and open space amenities to be developed by TICD or other parties include the following:

- A large regional great park
- Sports and recreation facilities with ball fields, soccer fields, etc.
- Neighborhood parks and playgrounds
- Community gardens
- Youth center to facilitate youth sports, activities and recreation
- Pedestrian/bicycle shoreline promenade (San Francisco Bay Trail)
- Outdoor courts for basketball and tennis
- Beach at Clipper Cove
- New hiking trails to connect to Yerba Buena Island and Hilltop Park
- Treasure Island Sailing Center, a new facility for this non-profit that gives city youth the opportunity to experience the bay first hand
- Sailboard launch areas
- Marina and pedestrian pier
CS4 Enrich the community through arts, culture and education

Residents of Treasure Island and Yerba Buena Island will be offered the opportunity to engage in a wide variety of arts, cultural and educational activities, including:

- A Welcome Center located in Building One to provide a wide array of services for residents, prospective residents and visitors.
- Outdoor performance space for community gatherings, festivals, concerts, and other arts performances.
- Environmental Education Center, a privately-funded center focusing on educational programs and exhibits related to sustainable practices on Treasure Island and the unique habitat that the Islands provide.
- Treasure Island Museum for the display of historical artifacts from the World’s Fair and Navy eras.
- An art/sculpture park on the western shoreline with both permanent and temporary installations, including possibly an environmental art component consistent with the overall theme of sustainability on the island.

CS5 Integrate the development with the existing Job Corps program

The 36-acre federal Department of Labor Job Corps campus situated in the middle of Treasure Island provides both a planning challenge and an opportunity. Current and former Job Corps directors have expressed interest in Job Corps being linked physically, programmatically and functionally into the current and future Treasure Island development and community. Job Corps will benefit from new development in the form of new and reliable backbone utility infrastructure, improved transit operations, access to increased open space, educational and cultural amenities, environmental sustainability measures and practices, and improved fire and police service. In addition to potential linkages between job training and placement programs at Treasure Island and city-wide, there is also an opportunity to physically link the campus to the surrounding development. Furthermore, while these opportunities need to be explored at the appropriate federal and local levels, there may be opportunities for use of Job Corps facilities for the larger Treasure Island community. Some of these opportunities might include:

- Expanding Job Corps’ ballfields to form a larger regional ballfield/recreational facility at Treasure Island
- Enabling shared community use of the gymnasium facility on the Job Corps campus
- Using medical/dental training programs and facilities to provide simple medical/dental services to island residents
- Co-locate the police/fire station on Job Corps property

CS6 Actively engage the community and stakeholders during the redevelopment process

Public participation has played and continues to play, a valuable role in guiding the development plan for
Treasure Island and Yerba Buena Island. Throughout the planning process, public outreach has been undertaken to ensure the redevelopment occurs in a manner that considers the values, concerns and needs of stakeholders. During the early planning stages of the redevelopment, a Citizens Reuse Committee was established to explore reuse opportunities and provide input to the City. A Citizen’s Advisory Board (CAB) has been established to provide a channel for public feedback and provide input and expertise to TIDA. The CAB is composed of 25 members appointed by the Mayor and Board of Supervisors and meets monthly to discuss matters related to Treasure Island. In addition, the expertise of other stakeholders, such as the San Francisco Planning and Urban Research Association (SPUR), has been sought to steer the redevelopment in a more sustainable direction. Finally, the TIDA website has been used to disseminate the studies, plans and other documents related to the redevelopment effort.

In April 2006 a workshop was held to seek public comment specifically on the sustainability components of the redevelopment. The workshop was hosted by the Treasure Island Development Authority, Treasure Island Citizen Advisory Board, San Francisco Department of Environment and Treasure Island Community Development. Appendix 6 provides a summary of the presentations made and the feedback received from participants. This sustainability plan has sought to address the concerns and questions raised by the participants, but it is recognized that some issues cannot be resolved until the detailed design and planning stages are complete.
Economic Development & Viability

Goal
To generate economic opportunities for local residents and businesses, and develop a financially self-sufficient and viable redevelopment plan.

Strategies
ED1. Incorporate a high share of affordable housing
ED2. Stimulate economic growth and share economic benefits through equal opportunity job programs
ED3. Ensure the project can be self-financed and will not negatively impact the City’s General Fund
ED4. Ensure the project is financially feasible for private partners
Existing Conditions
As a Naval Station, historically Treasure Island’s economic activity was generated by the military. Most workers were employed by the Department of Defense or by other public organizations serving the military residents, and about 40% of these workers lived on-site. Following the base closure, there was a significant drop in the population and in economic activities. Some buildings have been leased for special events and commercial use, but a significant number remain abandoned.

About three-quarters of the former military housing units have been refurbished and turned into market rate housing; the remaining units are used by the Treasure Island Homeless Development Initiative (TIHDI) to provide affordable, transitional housing for disadvantaged and homeless individuals. TIHDI is a collaborative of 20 community agencies formed in 1994 to develop the homeless component of the Reuse Plan for Treasure Island. Besides managing affordable housing, TIHDI also helps to generate work opportunities for residents who participate in their programs.

Strategies
The development plan for Treasure Island and Yerba Buena Island provides an unprecedented opportunity to generate economic benefits through the creation of new jobs, small business opportunities and affordable housing alternatives. The economic development program will build on the efforts of organizations like TIHDI, and use the redevelopment to catalyze economic activity and direct economic opportunities to small businesses, local residents, and low-income or homeless individuals. Workforce participation targets have been established to direct jobs and contracts to small businesses and homeless or disadvantaged individuals. A significant share of the housing program will also be targeted to low-income residents. These measures will help to make the economic benefits of the redevelopment available to a broad class of City residents and businesses.

Another important component of the economic development strategy is that the redevelopment should be financially viable; in other words, the costs of providing municipal services to the Island should not negatively impact the City’s General Fund.

The economic development strategies discussed in this section have been adapted from the following documents: “Jobs & Equal Opportunity Program”; “Fiscal Analysis of the Treasure Island Redevelopment Project”; draft “Housing Plan”; and Draft Financing Plan and Transaction Structure.”

ED1 Incorporate a high share of affordable housing
A full 30% of housing will be affordable, including at least 6% for very-low income households. These units will be provided by TICD and other private developers, TIDA and TIHDI, and distributed across housing types.

TICD and other third party, private developers will be required to provide 15% inclusionary units in its housing program. For-sale inclusionary housing will be targeted at households earning 100% of the San Francisco median income (SFMI, currently equal to $91,200 for a four person household), while for-rent inclusionary units will be targeted at households earning 60% of the SFMI.
TICD is also coordinating with other agencies and financial institutions to provide qualified homebuyers with access to down payment assistance, first-time buyer financing programs and home ownership counseling services.

30% affordable housing

ED2 Stimulate economic growth and share economic benefits through equal opportunity job programs

The redevelopment effort will generate a significant amount of economic activity, much of which will be directed to the community, including local businesses and residents. Preliminary analysis undertaken by the Concord Group indicates that an average of 2,450 construction jobs will be created per year over a five year build out, and that a total of 2,500 new permanent jobs will be created. The design and construction work will provide substantial contracting opportunities for local contractors and professional services firms. A portion of these jobs and contracting opportunities will be directed to local, small and economically disadvantaged companies and individuals, whenever qualified candidates are available.

A partial list of the workforce targets that have been identified in the “Jobs & Equal Opportunity Program” is provided below. Contractors, professional service firms and other suppliers are advised to undertake “best faith efforts” to meet the targets, subject to collectively bargaining or project labor agreements.

In addition to these employment opportunities, it should be noted that the City will encourage the growth of green businesses and creation of green jobs on Treasure Island.

High-End Targets

• 30% affordable housing
• 41% of construction to be performed by Small Business Enterprises (SBEs)
• 25% of construction jobs and of all permanent jobs to be filled by homeless or disadvantaged persons
• 50% of all construction jobs and of all permanent jobs to be filled by San Francisco residents
• No negative impact to City General Fund

Benefits

• Increase in affordable housing stock
• Creation of new jobs
• Economic opportunities redirected to small business and disadvantage individuals within the community
• Financially viable community at buildout

Frameworks supported

• Urban Environmental Accords
• LEED™ ND
• City Sustainability Plan
• Healthy Development Tool

Tools & Programs

To help meet these goals, specific tools and programs will be developed, including refining of the
Job Broker/Placement System for screening, training and verifying the qualifications of applicants referred for construction and non-construction short-term and permanent jobs. Contractors and developers will be expected to demonstrate in good faith the efforts that have been made to identify and hire qualified candidates and achieve the workforce hiring goals that have been established.

A Construction Assistance Program will be established to ensure that local San Francisco construction contractors and other businesses/employers, including qualified SBEs, are given an opportunity to obtain needed insurance, bonding, technical and financial assistance in order to fully participate in the demolition and deconstruction of existing buildings, construction of portions of the horizontal infrastructure and portions of the vertical residential, commercial and community facilities to be constructed at Treasure Island as well as create and sustain long term businesses and related jobs. A model mentorship program will also be created to foster emerging Small Business Enterprise firms who are capable of performing high quality construction at competitive prices.

**Additional TIHDI Economic Opportunities**

Additional economic development opportunities and programs have been identified to support TIHDI’s goals and objectives for supporting formerly homeless and economically disadvantaged San Franciscans. These opportunities include rights to negotiate for service and maintenance contracts and efforts to facilitate participation by Homeless or Economically Disadvantaged persons in deconstruction activities, as outlined in the “Jobs & Equal Opportunity Program.”

**ED3 Ensure the project can be self-financed and will not adversely impact the City’s General Fund**

A key policy established by TIDA early on in the redevelopment process is that the project must be funded by sources that result from the value created by the redevelopment and should not adversely impact the General Fund or require public funds for operating subsidies.

The projected funding sources for the redevelopment are private capital, Mello Roos bonds (a form of land-secured tax-exempt financing, and land-secured tax-increment bonds. The City’s General Fund will not be used to finance any of the proposed capital improvements.

Another important aspect in considering the viability of the redevelopment plan from the perspective of the City is the funding required for municipal services.

The relative isolation of TI and YBI from the rest of the City contributes to above-average service costs. In addition, the long-term phasing of the project means that the initial revenues from the project may not be sufficient to cover the initial costs of providing necessary services.

A fiscal analysis was undertaken by Economic & Planning Systems, Inc. to assess the potential level, timing and costs of General Fund services necessary to support the future neighborhood and compare this to General Fund revenues. The analysis provided a basis for structuring financial mechanisms to mitigate...
potential annual fiscal impacts, and to assure a stable, ongoing source of funding to sustain the quality of life on the island.

Key conclusions of the analysis are as follow:
- At project buildout, revenues are projected to cover annual ongoing operating costs.
- The project may generate additional dedicated revenues and contribute towards City-wide programs.
- During initial phases prior to buildout, fiscal shortfalls are likely, requiring project contributions to prevent a negative impact on the General Fund.
- TIDA will establish a municipal services payment for years in which the costs of public services are projected to exceed tax revenues. These established fees will be a project cost and will be paid from project cash flow on a priority basis before cash flow goes to TICD.
- The Disposition and Development Agreement will identify reliable funding sources for open space maintenance and subsidies for transportation services and programs.

ED4 Ensure the project is financially feasible for private partners

The development plan for TI/YBI will move forward only if there is a business plan provides adequate returns to private investments that are commensurate with the risks. Based on current projections, a public-private capital infusion of $1.2 billion is needed for the horizontal development of the islands and the funding of various community benefits deemed necessary to create a robust, healthy and sustainable community, including over $724 million in infrastructure costs alone. A large portion of TICD’s capital contribution will be invested before any tax exempt financing becomes available and before the first residential land is projected to be offered for sale in 2011 (3rd year of redevelopment). TICD’s cash flow is projected to remain negative through 2013 (5th year of redevelopment). The complexity of the project and the significant capital required for upfront infrastructure works, combined with the long payback period for the investment, compound the financial risks associated with the project and necessitate a commensurate return on investment.

Based on the current development plan and certain key economic assumptions, an analysis was undertaken to assess the financial feasibility of the project. The projected return on investment to TICD at this stage of project planning supports continued private investment in the project. As the project planning moves forward, it is vital that the financial feasibility of the redevelopment be kept in balance so that private investors can expect to maintain a commercially reasonable market return on investment.

Although the development plan will maintain some flexibility for incorporating new sustainability technologies over time (as discussed in the implementation plan, Section 6), these investments will be evaluated on the basis of maintaining, at a minimum, an equivalent set of project economics.
6. IMPLEMENTATION PLAN

This section provides a summary of the implementation plan for undertaking the sustainable redevelopment of Treasure Island. The construction and build out will be phased over a ten year period (2009 – 2018). During this time, it is expected that new technologies will emerge and techniques or methods may become more cost-effective that may facilitate achieving even higher levels of sustainability. As discussed below, the implementation plan is designed to be a flexible tool that enables different sustainability strategies, technologies or tools to be evaluated or revisited over time. Achieving the sustainability goals for the redevelopment will require extensive collaboration with partners who share the responsibility for delivering on the long term vision of sustainable development and operation of Treasure Island and Yerba Buena Island.

Phasing

The redevelopment of Treasure Island and Yerba Buena Island is expected to be undertaken in four major phases, as shown in Figures 28 through 31 and table 6. The first phase will cover the development of island-wide infrastructure backbone and geotechnical stabilization, while the remaining three phases will cover the residential, commercial and open space development. A total of approximately 6000 units will be built during the 8 year period of residential development.
Implementation Plan

Integration of Sustainability
Implementation of sustainable measures will follow a progression associated with the phasing of development. Therefore, the project is expected to attain progressively higher levels of sustainability over time. Table 7 illustrates the integration of sustainability measures into the development by phase. The associated strategies from each focus area are indicated in parentheses for reference.

Resources and Tools for Delivering Sustainability
Achieving the long-term sustainability goals set out for the Treasure Island redevelopment will not be an easy task. It will require an approach that is flexible and adaptable over time, and open to new technologies and techniques. Sustainability
<table>
<thead>
<tr>
<th>Focus Area</th>
<th>DDA/Close of Escrow</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
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<tr>
<td></td>
<td></td>
<td>2007-2009 (Figure 28)</td>
<td>2009-2013 (Figure 29)</td>
<td>2012-2014 (Figure 30)</td>
<td>2016-2018 (Figure 31)</td>
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<tr>
<td>Site Design and Land Use</td>
<td>Prepare and adopt Green Building Specifications</td>
<td>Create green infrastructure that will support dense, compact development (S1 and S3)</td>
<td>Build 1800 homes to TI’s green specifications and obtain DBI approval</td>
<td>Build 1625 homes to TI’s green specifications and obtain DBI approval</td>
<td>Build 2575 homes to TI’s green specification and obtain DBI approval</td>
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<td>Orient streets for solar and wind optimization (S4)</td>
<td>Build neighborhood serving retail district to TI’s green specifications (S3)</td>
<td>Construct sports facilities, retail district at Marina Plaza, and a community plaza to TI’s green specifications (S3, CS1, CS3,)</td>
<td>Apply for LEED™ ND certification for entire development</td>
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<td>Begin system of paths and trails (S2, T1)</td>
<td>Renovate TI school (M1)</td>
<td>Renovate Bldg 1 in accordance with cultural preservation guidelines (M1)</td>
<td>Create Urban Farm and Great Park (S2, L1, L2, L3, L5, L6)</td>
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<tr>
<td>Landscape &amp; Biodiversity</td>
<td>Establish baseline for biological diversity (L1)</td>
<td>Grow native or regionally appropriate plant stock on site for use in landscaping in temporary nursery on-site (L3)</td>
<td>Landscape with native or regionally appropriate plants (L3)</td>
<td>Landscape with native or regionally appropriate plants (L3)</td>
<td>Landscape with native or regionally appropriate plants (L3)</td>
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<td>Develop IPM program (L5)</td>
<td>Preserve healthy mature trees to the extent possible (L3)</td>
<td>Preserve healthy mature trees to the extent possible (L3)</td>
<td>Preserve healthy mature trees to the extent possible (L3)</td>
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<td>Enhance biological diversity (L1)</td>
<td>Enhance biological diversity (L1)</td>
<td>Enhance biological diversity (L1)</td>
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<td></td>
<td></td>
<td>Implement IPM program (L5)</td>
<td>Implement IPM program (L5)</td>
<td>Monitor success of IPM program and adjust as appropriate (L5)</td>
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<tr>
<td>Transportation</td>
<td>Build ferry quay and terminal (T2)</td>
<td>Build ferry quay and terminal (T2)</td>
<td>Construct intermodal transit center (T2)</td>
<td>Fine tune existing ferry and bus service and implement more frequent ferry and bus service (T2)</td>
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<td>Begin construction of bike and pedestrian paths (T1)</td>
<td>Implement bus and ferry service (T2, T3)</td>
<td>Fine tune existing on-island shuttle operations (T2)</td>
<td>Fine tune existing on-island shuttle operations (T2)</td>
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<td>Create Transportation Management and Parking District (T2, T3)</td>
<td>Implement free on-island shuttle (T2)</td>
<td>Implement transit pass program (T3)</td>
<td>Fine tune existing on-island shuttle operations (T2)</td>
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<td>Implement bike lending program (T1, T3)</td>
<td>Implement Congestion Pricing program (T3)</td>
<td>Fine tune existing on-island shuttle operations (T2)</td>
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<tr>
<td>Energy</td>
<td></td>
<td>Develop new electrical infrastructure and backup supply to account for increased demand (E1)</td>
<td>Build energy efficient buildings with photovoltaics (or other technologies) integrated according to the renewable energy portfolio plan (E3, E5)</td>
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<td>Build central plant for heating and cooling (E2)</td>
<td>Integrate PV (or other technologies) into rooftops through partner financing (E3, E5)</td>
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<td>Establish power provider and renewable mix of grid-source power with the goal of minimizing carbon emitting supply (E4)</td>
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<tr>
<td>Water &amp; Wastewater</td>
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<td>Provide water and wastewater conveyance piping, and backup supply to island (W1)</td>
<td>Construct preliminary stormwater treatment wetland (W3)</td>
<td>Expansion of stormwater treatment wetland (W3)</td>
<td>Complete stormwater treatment wetlands (W3)</td>
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<td>Causeway and viaduct stabilization (W1)</td>
<td>Integrate low-flow fixtures into buildings appropriate to the use (W2)</td>
<td>Provide reclaimed water for irrigation (W4, W5)</td>
<td>Provide reclaimed water for irrigation (W4, W5)</td>
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<td>Plumb commercial buildings for use of recycled water (W2, W5)</td>
<td>Secondary water treatment facility constructed (by others) (W4)</td>
<td>Integrate low-flow fixtures into buildings appropriate to the use (W2)</td>
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<td>Tertiary treatment capabilities installed (by others) at WWTP (W4)</td>
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<td>Plumb commercial buildings for use of recycled water (W2, W5)</td>
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<td>Minimize runoff from construction activities (W3)</td>
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<td>Provide reclaimed water for irrigation (W4, W5)</td>
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