



Sustainability Parameters:

Energy, Water, Greening, Air Quality, Waste

**Balboa Reservoir
Community Advisory Committee Meeting
*December 14, 2015***

Sustainability Priorities

- Create an exemplar neighborhood that achieves current environmental sustainability requirements and goals
- Maximize cross-cutting strategies and co-benefits
- Inspire innovative designs and technologies to exceed targets and maximize efficiencies



Current Requirements & Goals

ENERGY*

Max efficiency buildings

GHG-free electricity

Better Roofs: solar, habitat, open space, urban agriculture, and stormwater

Non-Potable Water Re-Use for toilets and irrigation

Renewable power purchase for electricity not generated on site

WATER*

Potable water efficiency/reduction

Dual plumbing for recycled water use

Onsite stormwater management (flow capture & filter)

ECOLOGY

Street trees

Connected green corridors

Greening

AIR QUALITY

0 [zero] waste sent to landfill

EV charging

Healthy indoor materials & air

GHG reductions (buildings & transportation)

WASTE*

Recycling, compost & waste streams

Litter reduction

** Potential for district-scale systems*

Potential Innovations

- **District-scale** energy and non-potable water systems
- Living / green walls and facades
- Community gardens
- Pollution filtering building skins
- Tamper-resistant, 3-stream litter bins



Principle #1: ENERGY

***100% GHG-free electricity in all new development:
Building efficiency + onsite renewables + “green” power purchase***



POTENTIAL FOR DISTRICT SCALE ENERGY GENERATION AND DISTRIBUTION SYSTEMS

ENERGY Parameter Highlight

***Passive design techniques [architecture and site planning]:
building orientation, shading, natural daylighting, and ventilation***



ENERGY Parameter Highlight

***Better Roofs:** onsite renewable generation (PV and solar thermal installations), ideally co-developed with green*



LEED, California Title 24, State + City goal, current SF concept

Principle #2: WATER

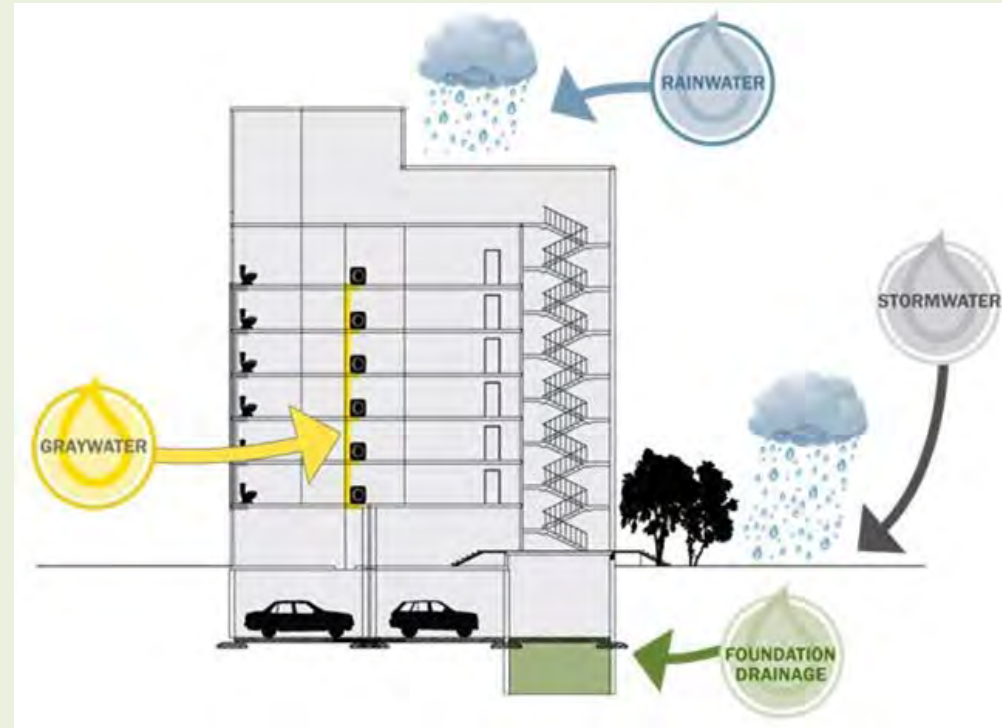
Maximize water efficiency and non-potable water use in buildings and open spaces



POTENTIAL FOR DISTRICT SCALE NON-POTABLE WATER SYSTEMS

WATER Parameter Highlight

- Treat and use **non-potable water** for toilet flushing and irrigation
- Non-Potable Sources:
 - Rain water
 - Grey water (showers, laundry, sinks)
 - Foundation drainage



Principle #3: STORMWATER

Manage stormwater onsite: improve water quality, minimize urban flooding, prevent Bay overflows



STORMWATER Parameter Highlight

***Reduced stormwater volume and flows on and off site:
green roofs, rain water cisterns, bioswales, rain gardens, detention***



Principle #4: ECOLOGY / GREENING

Connect people to nature throughout the neighborhood



ECOLOGY / GREENING Parameter Highlight

Living/green roof = habitat creation, air quality improvements and carbon sequestration, usable open space, building cooling, urban agriculture, and stormwater management



ECOLOGY / GREENING Parameter Highlight

Drought tolerant plants and trees that support biodiversity and habitat – plus integrated gardens and orchards



ECOLOGY / GREENING Innovation

Living walls and facades that complement and enhance the public realm (environmental comfort and aesthetics)



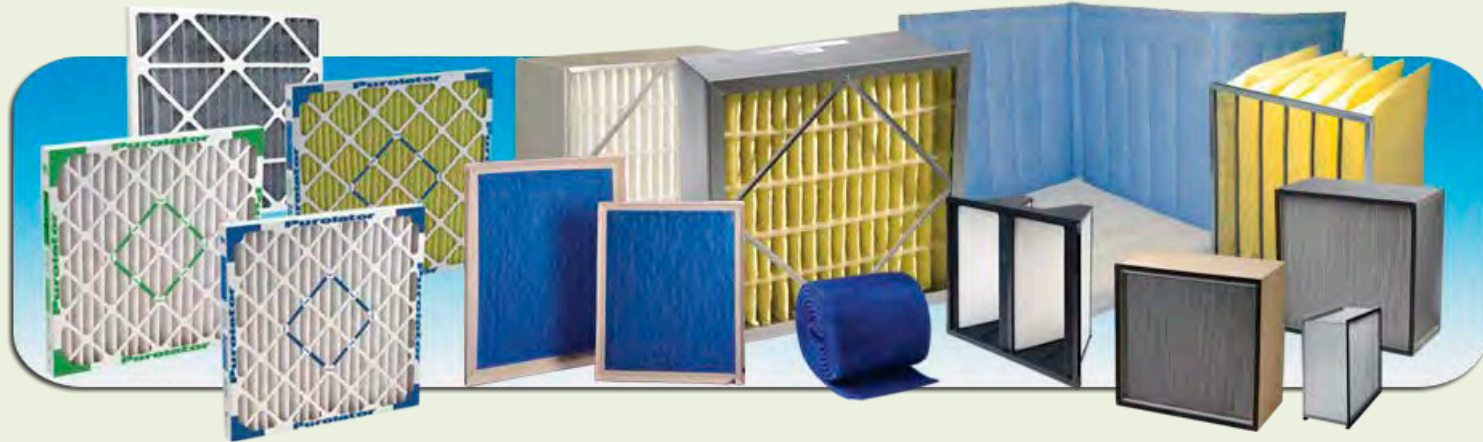
Principle #5: AIR QUALITY

Ensure healthy indoor and outdoor environments



AIR QUALITY Parameter Highlight

Indoors: enhanced ventilation and toxic-free building materials



AIR QUALITY Innovation

“Smart” building materials and exterior skins that filter air pollution and reduce solar gain



Principle #6: SOLID WASTE

Support the City's ambitious Zero Waste goal [by 2020]



SOLID WASTE Innovation

*Tamper-resistant, 3-stream public realm litter bins
(potential for design competition)*





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Current Requirements + Goals

- The **Non-Potable Water Ordinance**, which requires new developments 250,000 square feet and larger be constructed and operated using available alternate water sources (e.g., rainwater, foundation drainage, and/or greywater) for toilet and urinal flushing and irrigation. The SFPUC Non-Potable Water Program provides additional information on the ordinance and tools to achieve compliance: <http://sfwater.org/index.aspx?page=686>
- For proposed projects, such as that under consideration at Balboa Reservoir, the **San Francisco Stormwater Management Ordinance** requires projects to reduce stormwater runoff rate and volume by 25% from pre-development conditions for the 2-year 24-hour design storm. The **SFPUC Stormwater Design Guidelines** provide additional information and provide tools to achieve compliance. <http://www.sfwater.org/index.aspx?page=446>
- Mayor Gavin Newsom and then Edwin Lee established a goal for San Francisco to have **100% Renewable Electricity by 2030**.
 - <http://www.sfenvironment.org/energy/renewable-energy>
 - A Task Force was convened in 2011 to develop recommendations for achieving this goal, outlined in this 2012 report:
http://www.sfenvironment.org/sites/default/files/fliers/files/sfe_re_renewableenergytaskforcerecommendationsreport.pdf

Current Requirements + Goals

- **San Francisco Green Building Ordinance/Code** requirements build on the State's California Green Building Standards Code (Title 24) requirements to reduce energy, water use, and construction debris, and support the health and comfort of building occupants in San Francisco. First adopted in 2008 and revised in 2013, apply to newly constructed residential and commercial buildings, as well as major renovations to existing buildings. New construction in San Francisco must meet all applicable California codes, provide on-site facilities for recycling and composting, and meet city green building requirements tied to the LEED (Non-Residential as LEED Gold and Residential as LEED Silver) and GreenPoint Rated green building rating systems.
 - Department of Building Inspection Guide. <http://sfdbi.org/sites/sfdbi.org/files/AB-093.pdf>
 - California Title 24. <http://energy.ca.gov/title24/>
 - San Francisco Green Building Ordinance. [http://library.amlegal.com/nxt/gateway.dll/California/sfbuilding/greenbuildingcode2013edition/capter1general0?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:sanfrancisco_ca](http://library.amlegal.com/nxt/gateway.dll/California/sfbuilding/greenbuildingcode2013edition/capter1general0?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca)
 - LEED, Leadership in Energy and Environmental Design. Some of the principles below are not increasing requirements but providing guidance for credit selection <http://www.usgbc.org/leed>
- **Better Roofs** collaboration in progress for potential legislation, to be confirmed. This legislation would amend the Environment Code (Sections 2601, 2602, and 706) and sections of the Green Building Ordinance to require rooftop solar and/or living roofs. Specifics will be confirmed for Balboa Reservoir following the introduction of this legislation. The parameters below include strategies toward these requirements.