



To: Members of the Balboa Reservoir Community Advisory Committee

From: Lisa Fisher, Sue Exline and Jeremy Shaw, Planning Department

Date: December 4, 2015

Subject: Sustainability Parameters for Discussion at the December 14, 2015 CAC Meeting

This memorandum pertains to the upcoming sustainability discussion at the CAC meeting scheduled for December 14, 2015. City staff will propose the following draft sustainability parameters based on community feedback to date combined with the City requirements for green buildings, utility infrastructure, and other sustainability-related ordinances and policies. In preparation for December 14th, please review this memo, share it with your respective constituencies and solicit comments, and be prepared to provide feedback at the CAC meeting.

As described at prior CAC meetings, these parameters (along with the others discussed to date) will help inform the selection of a high-quality developer partner for the Balboa Reservoir site. This selection will occur through a Request for Proposals (RFP) process in which prospective developers will propose concept-level ideas for development at the site. In addition to their experience and the proposal's financial feasibility, these proposals will be evaluated on how they adhere to these sustainability parameters. Please note that the writing of these guiding parameters are just the beginning and that the winning proposal will be refined over several rounds of design development with feedback from the City, community members, and the CAC.

Please note that the community and the City will have additional opportunities to shape the development after writing the parameters. Once a developer partner is selected through the RFP process, the winning proposal will be refined with additional feedback from community members and the CAC.

It is our experience that the RFP process is most successful when the development parameters balance (1) setting clear expectations about City and community priorities and (2) providing flexibility for proposals to creatively meet and exceed those priorities. The best responses allow for continued, iterative work after the developer selection and, ultimately, the strongest end result. The draft parameters below seek to strike that balance by providing high-level guidance on important sustainability design elements.

Recognizing that San Francisco has some of the most innovative and rigorous sustainability requirements in the U.S. for new developments (discussed below under, Background Information), this memorandum highlights those requirements and outlines a structure for developer-initiated proposals that exceed current standards; to this, each parameter includes potential innovations for consideration in developer proposals.

BACKGROUND INFORMATION

At the December 14th meeting, staff will also present background information that will help inform the discussion of the proposed parameters. You can find additional current policy direction and guidance for sustainability at Balboa Reservoir by consulting these resources:

1. Community input and background studies to the Balboa Reservoir process to date.
www.sf-planning.org/index.aspx?page=3989#materials
2. Balboa Reservoir Site Opportunities and Constraints Map / Existing Conditions report.
<http://www.sf-planning.org/index.aspx?page=3989#materials>
3. Balboa Park Station Area Plan contains policies regarding open space, pedestrian and transit access, and urban design in the Balboa Park Station Plan area.
<http://www.sf-planning.org/index.aspx?page=1748>

A number of current local regulations, codes and design guidelines will ultimately apply to the site design, including but not limited to the following:

1. 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>
2. 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>
3. The **San Francisco Green Building 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, San Francisco's green building requirements 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. For details on these requirements please see:
 - a. Department of Building Inspection Guide. <http://sfdbi.org/sites/sfdbi.org/files/AB-093.pdf>
 - b. California Title 24. <http://energy.ca.gov/title24/>
 - c. San Francisco Green Building Ordinance. [http://library.amlegal.com/nxt/gateway.dll/California/sfbuilding/greenbuildingcode2013edition/chapter1general0?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:sanfrancisco_ca](http://library.amlegal.com/nxt/gateway.dll/California/sfbuilding/greenbuildingcode2013edition/chapter1general0?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca)
 - d. LEED, Leadership in Energy and Environmental Design (As of 2015, non-residential buildings must achieve LEED Gold and Residential buildings LEED Silver). Some of the principles below are not increasing requirements but providing guidance for credit selection <http://www.usgbc.org/leed>

4. **Better Roofs** legislation is planned for submission to the Board of Supervisors mid December 2015. 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.
5. Mayor Gavin Newsom and then Edwin Lee established a goal for San Francisco to have **100% Renewable Electricity by 2030**.
 - a. <http://www.sfenvironment.org/energy/renewable-energy>
 - b. 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

PROPOSED PARAMETERS REGARDING SUSTAINABILITY

Principle #1: [ENERGY] Building on the City's robust energy efficiency requirements, reduce or eliminate greenhouse gas (GHG) emissions from new buildings to the greatest extent feasible. Maximize the use of renewable energy (generated on the Balboa Reservoir site, to the extent feasible) and realize 100% of electricity in all new development from renewable (GHG-free) sources.

Draft Parameters

- a. Meet energy efficiency requirements through attention to building fixtures and appliances, lighting, HVAC, and plug loads, per the requirements of the San Francisco Green Building Code and California Title 24 (30% reduction for Residential Buildings and 40% for Non-Residential).
- b. Realize additional energy efficiency through passive design techniques, such as building orientation (to maximize solar energy potential), shading, materials/skins that control solar gain (to minimize interior heat gain), daylighting, and natural ventilation.
- c. Through both site and building design, maximize the use of solar energy generation on the Balboa Reservoir site from rooftop and/or building skin photovoltaic systems (PV) and solar thermal (rooftop solar hot water systems); Title 24 currently requires 15% of rooftop areas be designed as "solar ready" and new San Francisco Better Roofs* legislation will require its installation (PV and/or solar thermal).
- d. Following efficiency and onsite renewable achievements, meet 100% of remaining electricity demand with renewable or GHG-free supplies. Work with SFPUC to confirm the feasibility of the City providing electric service to the development from renewable and GHG-free supplies, consistent with [San Francisco Administrative Code](#) Chapter 99.
- e. *Potential Innovation: Also in support of Principle #5, reduce or eliminate GHG emissions and air pollutants from natural gas use by substituting electricity in place of natural gas appliances (e.g., space heating, hot water heating, laundry, and cooking appliances).*

*Better Roofs legislation anticipated for introduction December 2015; all related parameters will be refined as needed to comply, once adopted.

- f. *Potential Innovation: A district-scale energy center, which may include:*
 - i. *Individual heating and cooling systems are connected with a shared heat loop that improves energy efficiency by enhanced pump operations.*
 - ii. *Buildings share energy by either rejecting or taking heat from the closed water loop, which reduces cooling tower needs in terms of space and energy use, and reduces load on central plant.*
 - iii. *Equipment is consolidated in one area onsite, saving space for other uses within individual buildings (including better use of roofs than cooling towers); can be separate building or housed in basement.*
- g. *Potential Innovation: Supply multiple buildings or the entire development with renewable energy systems (including solar PV), which may provide renewable generation at a reduced overall cost compared to individual systems and efficiencies in construction costs.*

NOTE: GHG-reduction from vehicles is addressed in the Transportation memo.

Principle #2: [WATER] Building on the City's robust water efficiency requirements, maximize non-potable water use in buildings and open spaces.

Draft Parameters

- a. Capture, treat, and reuse rain water, grey water (showers, laundry, and some sinks), and foundation drainage (as available), per current non-potable water regulations applicable to all new development 250,000 SF and larger.
- b. Use treated non-potable water (per 2a) in all new buildings for toilet flushing and irrigation for open space / landscaping.
- c. *Potential Innovation: District-scale non-potable water system.*
- d. *Potential Innovation: Use non-potable water for laundry and heating system cooling (laundry reuse would require approval from the San Francisco Department of Public Health).*

Principle #3: [STORMWATER] Optimize onsite stormwater management to improve water quality and minimize potential for urban flooding and help prevent overflows of the City's combined sewage system into the Bay.

Draft Parameters

- a. Comply with the City's Stormwater Design Guidelines performance requirements for total volume and peak flow reduction of the 2-year, 24-hour storm in regards to pre-site conditions.
- b. Design streets and open spaces to include a coordinated network of urban greening to minimize stormwater runoff.
- c. Design streets and open spaces to include context specific low impact development approach and use stormwater management tools, such as rain gardens, bioswales and flow-through planters, and detention ponds.

- d. Coordinating with Principle #4 below, develop up to 100% of usable roof space for one or more Better Roof* uses as feasible (e.g., solar, living roof/habitat, usable open space, urban agriculture), while meeting requirements for stormwater and non-potable water capture.
- e. *Potential Innovation: Maximizing permeable paving materials in parking spaces, play courts, and open spaces (assuming on-site pervious soils).*

Principle #4: [ECOLOGY / GREENING] Connect all residents, workers, and visitors to nature by maximizing habitat supportive trees and landscaping on roofs, streetscapes, and open space areas, as appropriate.

Draft Parameters

- a. Design a comprehensive network of parks, open spaces, and green connections that provide continuous ecological corridors to, from, and through the site; to be coordinated with public realm parameters.
- b. Coordinating with Principle #3 above, prioritize living/green roof uses that contribute to: habitat creation, air quality improvements and carbon sequestration, usable open space, urban agriculture, building cooling, and stormwater management co-benefits.
- c. Limit the use of landscaping to drought tolerant plants and trees that support biodiversity and habitat; and/or encourage the use of plants that also provide food production (urban agriculture and fruit trees).
- d. Also in support of Principle #5, compliance with the San Francisco Reduced Risk Pesticide List and preference for the use of non-toxic organic pesticides and fertilizers in the neighborhood.
- e. *Potential Innovation: Drought-tolerant living facades (i.e., exterior walls covered with plants) irrigated by non-potable water reuse, especially for walls facing the public realm.*
- f. *Potential Innovation: Community garden spaces and a plan for maintaining them as gardens.*

Principle #5: [AIR QUALITY] Support a healthy environment by reducing indoor and outdoor air quality impacts, such as toxins in building materials and vehicle idling. NOTE: Outdoor air quality is also enhanced through the “greening” parameters discussed in Principle #4.

Draft Parameters

- a. For residential buildings, apply the Public Health Department’s Article 38 for indoor air quality (enhanced ventilation) and San Francisco Green Building Ordinance’s prohibition of indoor toxins in adhesives and sealants (LEED EQ 4.1), paints and coatings (LEED EQ 4.2), , and carpets and floorings (LEED EQ 4.3).
- b. For Non-Residential buildings, comply with additional Green Building requirements for non-toxic/low-emitting composite wood and agrifiber products (LEED EQ 4.4).

- c. Establish the project site as a “No Idle” zone, per the Bay Area Air Quality Management District (BAAQMD) policy for local governments to identify and enforce no idle zones.¹
- d. Include electric charging stations for vehicles and bicycles in garages and on-street parking spaces, and model building electricity capacity to accommodate adequate energy loads.
- e. Include electric plug-in stations at loading areas to eliminate idling of refrigerated and other diesel trucks.
- f. *Potential Innovation: Incorporating external building materials and technologies (building “skins”) that help reduce air toxins, filter pollutants, and control solar gain.*

Principle #6: [SOLID WASTE] Achieve the City’s Zero Waste goal² and a litter-free public realm.

Draft Parameters

- a. Per City and LEED requirements, provide sufficient space for sorting and storing recycling (including large cardboard and other bulk items), composting, and trash in all buildings and open spaces.
- b. Per current code, accommodate all three waste streams (recycling, composting, and garbage) in any garbage chute system (may be installed as three separate chutes or a single, programmable chute whereby the user selects the appropriate category); provides greater flexibility for a future that may only include two streams.
- c. As part of the required LEED Gold and Silver credit totals, achieve at least two of LEED Materials and Resources points for environmental products regarding raw materials sourcing.
- d. *Potential Innovation: Install a district-scale pneumatic / vacuum waste system that serves the entire site, with a central collection facility embedded in an accessible garage or ground floor, or as a stand-alone facility.*
- e. *Potential Innovation: Conduct a whole-building life-cycle assessment, as defined by LEED Materials and Resources “Building Life Cycle Impact Reduction” credit Option 4.*
- f. *Potential Innovation: Provide public realm waste bins that accommodate all three waste streams, are easy to use, educate the community, and prevent tampering. These bins could potentially be designed through a design competition.*
- g. *Potential Innovation: Use organic waste in local energy production / district energy center.*

¹

http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/DraftPlanApproachV3_May%202012.ashx

² <http://www.sfenvironment.org/zero-waste/overview/zero-waste-faq>