Chapter VII. Infrastructure

Introduction

City residents, institutions, and the business community depend upon reliable, flexible, and cost-effective infrastructure to ensure that existing homes and businesses have efficient utility services and that desired growth can be accommodated. Several public, quasi-public, and private infrastructure service providers maintain the systems that support urban uses: the water supply system that provides high quality and reliable drinking water from the Hetch Hetchy Regional Water System, the sewer system that collects and treats sewage from homes and businesses in the wastewater treatment facility, the storm drain system that reduces urban flooding by moving stormwater runoff to waterways, the natural gas and electric lines that heat and cool our homes, and the telecommunications infrastructure that keeps us connected. We expect these systems to function without interruption, and the only time we really notice them at all is when they do not work, which is rare. This can be attributed to the attention paid to keep infrastructure in Burlingame up to date and to improve systems so that local businesses remain cutting edge and competitive.

This Infrastructure Element establishes goals and policies focused on the efficient and reliable provision of utilities and infrastructure throughout Burlingame sufficient to support the planned level of growth and economic development goals. This element addresses:

- Efficient and Sustainable Municipal Operations
- Water Delivery and Supply
- Wastewater
- Stormwater Drainage and Flood Control
- Solid Waste and Recycling
- Energy
- Telecommunications
Efficient and Sustainable Municipal Operations

The City of Burlingame Public Works Department maintains systems for water supply and delivery, wastewater collection and treatment, and stormwater drainage and flood control. The City contracts for solid waste and recycling services, with agreements with services providers revisited on a regular basis to ensure community needs and objectives are being met. The City is committed to providing high service levels through its own operations and for contract services.

Goal IF-1: Ensure the provision of adequate, efficient, and sustainable municipal operations to ensure long-term, high-quality utility services for Burlingame residents, institutions, and businesses.

IF-1.1: Infrastructure Priority

Prioritize capital improvement funding to rehabilitate or replace critical infrastructure that has reached the end of its useful life or has capacity constraints. [MP, SO]

IF-1.2: Development Fair Share

Ensure, through a combination of improvement fees and other funding mechanisms, that new development pays its fair share of providing new public facilities and services and/or the costs of expanding/upgrading existing facilities and services impacted by new development. [DR, FB]

IF-1.3: Neighborhood Compatibility

Ensure that public facilities and infrastructure are located, designed, and maintained so that noise, light, glare, or odors associated with these facilities will not adversely affect nearby land uses, particularly residential areas. Require these facilities to use building and landscaping materials that are compatible with, or screen them from, neighboring properties. [DR]
IF-1.4: Sustainable Practices

- Make purchasing decisions that minimize packaging and avoid waste.
- Implement recycling programs that reduce waste beyond State-mandated requirements.
- Implement municipal energy efficiency and conservation practices that reduce water, electricity and natural gas use.
- Run fleet operations in a manner that reduces the consumption of non-renewable energy sources. [DR, SO, PI]

IF-1.5: Sustainable Contracting

When awarding contracts, professional service agreements, and grants to businesses and non-profit agency partners, request that proposals or applications include information about the sustainability practices of the organization. [SO, PA]

IF-1.6: Design Capacity

Ensure that public infrastructure is designed to meet planned needs consistent with the General Plan growth capacity to avoid the need for future upsizing. Maintain a balance between meeting future growth needs and over-sizing of infrastructure to avoid fiscal impacts or impacts on other goals. [MP, SO]

IF-1.7: Coordination

Require coordination of construction activity between various providers, particularly in City facilities and rights-of-way, to ensure that the community is not unnecessarily inconvenienced. Require that providers maintain adequate space for all utilities when planning and constructing their infrastructure. [AC, PA, PI]

Water Delivery and Supply

The City operates an extensive water distribution system using water largely supplied by the San Francisco Public Utilities Commission (SFPUC) via the Hetch Hetchy Regional Water System. The local storage and distribution system, shown in Figure IF-1, serves all portions of the
community. In 2004, the City prepared a Water System Master Plan that identified deficiencies within the water system and prioritized improvement projects to ensure the long-term integrity of the water system. Due to aging water system infrastructure, long-term projections for completion of improvements and annual upkeep and replacement of the system are constant necessities.

Given California’s history of severe droughts and projected increases in the Bay Area population through 2040 and beyond, water conservation is critical for ensuring that future demands can be met sustainability. Prior to the drought of 2011-2016, Burlingame water users consumed approximately 3.0 to 5.5 million gallons per day of potable water. As of July 2015, that level had dropped significantly, to approximately 2.4 to 4.6 million gallons per day. The conservation achievement was spurred both by a statewide mandate imposed by Governor Jerry Brown and collective voluntary water conservation efforts by community members. However, water use in the city is projected to rise to approximately 5.22 million gallons per day by 2040 (accounting for both residential and nonresidential users). As of 2016, the City had a water supply assurance agreement from the SFPUC to receive an allotment of 5.23 million gallons per day on an annual average. While the allotments are negotiated on a scheduled basis, with Burlingame having the ability to request an increased supply, rising water costs and the almost finite water supply means that increased future conservation measures will be needed to ensure supplies remain available.

The following goal and policies aim to improve the overall function and reliability of the water system and to encourage water conservation by all users.
Goal IF-2: Ensure the long-term availability of water through conservation methods and regular maintenance and improvements to the overall water supply delivery system.

IF-2.1: Water System Reliability

Improve water system reliability by replacing and repairing water lines that are leaking or otherwise meet the City’s criteria for replacement. [MP, DR, SO]

IF-2.2: Seismic Upgrades

Continue to improve the seismic safety of the water system, including seismic retrofits of water storage facilities and improvements to pipes near fault lines and/or subject to severe groundshaking. [MP, SO]

IF-2.3: New Development

Ensure long-term water supply capacity prior to granting building permits for new development. Require that new development projects fund the full cost of upgrading water storage and supply infrastructure to meet their specific needs. [DR, SO]

IF-2.4: Water Agency Participation

Continue to participate in the Bay Area Water Supply and Conservation Agency and purchase water from the San Francisco Public Utilities Commission. [AC]

IF-2.5: Urban Water Management Plan

Prepare, maintain, and implement an Urban Water Management Plan, including water conservation strategies and programs, as required by the State’s Water Management Planning Act. [MP, SO]

IF-2.6: Water Treatment Capacity and Infrastructure

If the San Francisco Public Utilities Commission is unable to provide water that meets drinking water standards, the City will plan, secure funding for,
and procure sufficient water treatment capacity and infrastructure to meet projected water demands. [SO, AC]

IF-2.7: Water Shortage Allocation Plan

Prepare, maintain, and implement a Water Shortage Allocation Plan that distributes available water from the regional water system among San Francisco Public Utilities Commission and wholesale customers in the event of a system-wide shortage of up to 20 percent. [SO, AC]

IF-2.8: Water Supply During Emergencies

Maintain emergency water connections in the event of disruption of delivery from the San Francisco Public Utilities Commission. Maintain emergency wells for short duration use in an emergency. [SO, AC]

IF-2.9: Water Conservation Standards

Comply with State water conservation standards. Encourage water conservation practices as a way of life. [SO, AC]

IF-2.10: Water Conservation Programs

Implement cost-effective conservation strategies and programs that increase water use efficiency, including providing incentives for adoption of water-efficiency measures. [SO, PI]

IF-2.11: Retrofits

Implement programs that incentivize businesses and private institutions to replace existing plumbing fixtures with water-efficient plumbing. [SO, PI]

IF-2.12: Recycled Water

Increase the use of recycled water as available, cost effective, and safe. This may include allowed use of graywater systems consistent with health and building codes. [S, SO, PI]
IF-2.13: Bay-Friendly Landscaping

Promote landscaping approaches that include native and climate-appropriate plants, sustainable design and maintenance, water-efficient irrigation systems, and yard clipping reduction practices. Provide guidance to the community regarding preferred landscaping and irrigation practices. [DR, PI]

Wastewater

The City of Burlingame owns, operates, and maintains the local sanitary sewage collection and treatment facilities. The network of pipes that collect sewage, which covers approximately six square miles and serves 9,000 customers (see Figure IF-2), consists of approximately 100 miles of gravity sewers, seven pump stations, and 15,800 linear feet of force mains. The wastewater collected is treated at the Burlingame Wastewater Treatment Plant (WWTP) on Airport Boulevard, which has a secondary treatment capacity of 15 million gallons per day (which includes wastewater treatment for the neighboring town of Hillsborough). The WWTP underwent upgrades in 1994, 2006, and 2011. Treated effluent from the plant (that is, the outflow) is transported by intertie pipeline through the cities of Millbrae and San Bruno to a regional outfall into San Francisco Bay located off Point San Bruno near South San Francisco.

Goal IF-3: Provide sufficient wastewater collection and disposal infrastructure to meet current and future community needs.

IF-3.1: Sewage Collection System

Operate and maintain the sewage collection system to minimize the potential for system malfunction or failure. [MP, SO]

IF-3.2: Wastewater Treatment Plant Operations and Maintenance

Operate and maintain the City’s wastewater treatment plant to ensure that wastewater discharge meets all applicable federal and regional permit provisions. [MP, SO]
IF-3.3: Innovative and Efficient Operations

Adopt innovative, efficient, and environmentally beneficial wastewater treatment technologies. [MP, SO]

IF-3.4: Reduce Infiltration and Inflow

Develop and implement a plan to repair or replace underperforming wastewater facilities to remove excessive infiltration and inflow from stormwater and other non-sewer sources. This includes effective enforcement of ordinances applicable to lateral sewer line replacement. [MP, SO]

IF-3.5: Seismic Upgrades

Continue to improve the seismic safety of the sewage collection and treatment system, including seismic retrofits of facilities near fault lines and/or subject to severe groundshaking. [MP, SO]

IF-3.6: Service to New Development

Ensure that adequate wastewater collection and treatment services for all new development are available before developments are approved. Require new development projects to fund the full cost of upgrading sewage collection and treatment infrastructure to meet their specific needs. [DR, SO]

Stormwater Drainage and Flood Control

Most of Burlingame’s storm drainage infrastructure was constructed in the early twentieth century. The City has constructed and maintains a network of open ditches and subsurface drainage pipes that supplement the natural streams, carrying urban runoff and stormwater flows into San Francisco Bay. The drainage infrastructure also includes pump stations in low-lying areas to move water toward the Bay. To address the age and condition of drainage and flood control infrastructure, in 2008 the City prepared a Storm Drain Improvements Report to highlight high-priority projects and guide upgrade investments within five watersheds: Easton,
Burlingame/Ralston, Sanchez/Terrace, Mills and El Portal/Trousdale. Annual storm drain fees assessed to all properties fund the $39 million in bonds sold to finance identified improvements through 2039 (see Figure IF-3). The improvement program is specifically designed to help increase storm drainage capacity, replace aging pipes and pumps, improve public safety, and reduce local flooding.

According to the Federal Emergency Management Agency (FEMA), the agency responsible for preparing Flood Insurance Rate Maps (FIRMs), Burlingame is located primarily within Zone X 0.2, which means there is a 0.2 percent annual chance of flood hazard (referred to as a 500-year storm event), and partially within Zone X - Area of Minimal Flood Hazard. Properties along certain creeks and on the Bayside of Highway 101 lie within Zone A, Zone AE, Zone AH, and Zone VE, all of which have mandatory flood insurance requirements. Figure IF-4 shows the flood zones in Burlingame.

Due to the age of the regional system, many of the storm drain systems have a 10-year design storm capacity, not the standard 30-year capacity for regional facilities. Some local storm drain systems also have less than a two-year design storm capacity, where the standard is also 10 years. In addition to these flood concerns, the City will be subject to flooding over time due to sea level rise, as outlined in the Safety Element. Flood protection improvements represent critical infrastructure investments needed to protect life and property and encourage continued private economic investment throughout Burlingame.

**Goal IF-4:** Protect people and property from the adverse effects of flooding through a stormwater system that adequately moves runoff from existing and future development, prevents property damage due to flooding, and improves environmental quality.

**IF-4.1: Storm Drain Infrastructure Maintenance**

Ensure that local storm drain infrastructure is sufficiently maintained to minimize flood hazards. [MP, SO]
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IF-4.2: Localized Flooding

Identify and correct problems of localized flooding. Promote the use of green infrastructure, whenever feasible, to mimic a natural hydrologic system that uses stormwater as a resource. [DR, MP, SO]

IF-4.3: Guard against Sea Level Rise

Pursue the policies outlined in the Safety Element related to sea level rise. [DR, MP, SO]

IF-4.4: Green Stormwater Infrastructure

Encourage Plan for and implement Low Impact Development (LID) techniques, such as green infrastructure which uses vegetation and soil to capture, treat, and retain stormwater runoff. Promote the use of pervious surfaces, green streets, and rainwater harvesting to achieve multiple benefits, such as creating open space, improving stormwater quality, and increasing groundwater recharge. Avoid or minimize the impact of stormwater discharges on local receiving waters, including the San Francisco Bay. [DR, SO]

IF-4.5: Improvement to Public Spaces

Design smart improvements to public spaces including streets, parks, and plazas for stormwater retention and groundwater infiltration by diverting urban runoff to bioretention systems and implementing LID techniques. Integrate green infrastructure that restores a natural hydrologic system such as trees, rain gardens, and vegetated swales into the urban environment. Encourage stormwater facilities that are designed to be a functional and attractive element of public spaces. [DR, PI]

IF-4.6: Grading Projects

Impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems. [DR]
IF-4.7: Diversion

Require new development to be designed to prevent the diversion of stormwater onto neighboring parcels. [DR, SO]

IF-4.8: Rainwater Harvesting

Encourage the use of rainwater harvesting facilities, techniques, and improvements where appropriate, cost effective, safe, and environmentally sustainable as a way to reduce urban runoff and stormwater flows into the storm drain system. [DR, PI]

IF-4.9: Pollution Prevention

Prevent pollutants from entering the storm drain system by managing point and non-point pollution sources through public and private facilities, local regulations, and education. [DR, PI]

Solid Waste and Recycling

Burlingame contracts with a private vendor for solid waste and recycling services. Under California law, the vendor, working in concert with the City, is required to divert waste from landfills (recycle and reduce) to achieve State waste reduction and pollution prevention goals. Burlingame residents, businesses, and local institutions have shown a clear commitment to reducing the waste stream, having achieved a 60 percent waste diversion rate as of 2016. The City has led by example through its Environmental Purchasing Policy and sponsorship of zero waste City events. Even with the tremendous success the City has achieved, additional waste reduction will be attained through increased recycling opportunities, new goals and programs for businesses and institutions, more home composting, and sustainable purchasing practices that extend to residents and businesses.

For additional policies related to solid waste reduction and recycling, refer to the Healthy People and Healthy Places Element.
Goal IF-5: Achieve waste reduction goals in excess of State mandates.

**IF-5.1: Effective Collection Services**

Monitor the City’s solid waste and recycling services franchisee to ensure that services provided meet the needs of the community. [MP, SO]

**IF-5.2: Landfill Capacity**

Coordinate with the City’s contracted waste hauler/recycler to ensure adequate landfill capacity in the region exists for the contract duration. [SO, AC]

**IF-5.3: Municipal Waste Reduction**

Reduce municipal waste generation by continuing to employ a wide range of simple and innovative techniques, such as electronic communications, to reduce paper usage and buying products with less packaging and in bulk. [SO, PI]

**IF-5.4: Disposable, Toxic, and Non-Renewable Products**

Identify uses of disposable, toxic, and nonrenewable products in City operations and seek ways to reduce, avoid, or substitute such uses with less toxic options. [SO]

**IF-5.5: Construction Waste Recycling**

Require demolition, remodeling, and major new development projects include salvaging or recycling asphalt and concrete and all other non-hazardous construction and demolition materials to the maximum extent practicable. [DR]

**IF-5.6: Electronic Waste Disposal**

Educate residents and businesses regarding proper and safe means of electronic waste disposal at permitted facilities, and make it easy for them to do so. [PI]
IF-5.7: Composting
Facilitate the ability of all residents to compost both for their own use and for collection by contract waste haulers. [SO]

IF-5.8: Regional Coordination
Support regional efforts to develop and implement effective waste management strategies. [PI]

IF-5.9: Outreach
Conduct and enhance programs that promote waste reduction through partnerships with schools, institutions, businesses, and homes. [PI]

IF-5.10: Hazardous Waste
Work with providers and businesses to provide convenient hazardous and e-waste facilities for the community. [AC, PA]

IF-5.11: Preferential Purchasing
Maintain and update a City preferential purchasing policy for products that reduce packaging waste, greenhouse gas emissions, and toxic contaminants, and that are reusable. [SO]

IF-5.12: Reuse
Encourage reuse of materials and reusable products. Develop a program for reuse of materials and reusable products in City facilities and outreach programs for community-wide participation by promoting community-wide garage sales and online venues. [SO]

IF-5.13: Collaboration
Collaborate with agencies and large businesses or projects to enhance opportunities for community-wide recycling, reuse and reduction programs. [PA, PI]
IF-5.14: Recycled Materials

Encourage the use of recycled materials and sustainably harvested materials in City and private projects. [DR, AC]

IF-5.15: Composting

Expand composting programs in coordination with waste vendor to all residential type and businesses.

IF-5.16: Zero Waste

Participate in negotiations with waste vendor to implement zero waste supportive contracts and services.

Energy

Two electricity providers service Burlingame, the Pacific Gas and Electric Company (PG&E) and Peninsula Clean Energy (PCE). PG&E provides electrical and natural gas service; offers programs and rebates for energy efficiency; operates and expands transmission lines and gas service based on projected demands; and ensures that systems are properly maintained and reliable. PG&E is required to make sure that transmission and distribution facilities incorporate safety features and the latest technological advancements.

PCE is San Mateo County’s community choice energy program that provides cleaner electricity at competitive rates and with a higher renewable energy content than PG&E. Burlingame joined PCE to provide a choice for its community, to reduce greenhouse gas emissions, and support renewable energy. PCE offers two rates for customers: ECOplus is the default rate with at least 50% renewable energy content; and ECO100 is the opt-up rate with 100% renewable energy. Most of Burlingame’s electricity customers are enrolled in PCE rather than PG&E and at the ECOplus rate. PCE plans to offer energy efficiency programs and rebates in the future.
Goal IF-6: Ensure the provision of adequate and safe gas and electric services to Burlingame residents and businesses, and that energy facilities are constructed in a fashion that minimizes their impacts on surrounding development and maximizes efficiency.

IF-6.1: Utility Provider Coordination

Coordinate with PCE, PG&E, and other service providers to make sure that they provide efficient, reliable, affordable, and state-of-the-art service to Burlingame, and that they promote technological improvements and upgrading of utility services. Coordinate with providers in the siting and design of gas and electric facilities to minimize environmental, aesthetic, and safety impacts. [AC, PA]

IF-6.2: Utility Facility Safety

Work with regulators and energy providers to monitor, evaluate, and maintain the safety of utility facilities (e.g., gas pipelines and electric lines and transformers). Where facilities are found to be a potential safety concern, especially those that could be impacted by seismic events, support utility provider efforts to repair or replace affected facilities. [AC, PA]

IF-6.3: Back-up Power Supply

Provide back-up power supplies for critical facilities. [SO]

IF-6.5: Undergrounding Utilities

Encourage the undergrounding of existing overhead facilities, and require new facilities to be undergrounded when tied to large-scale or multi-block development. [DR, MP]

IF-6.6: Utility Line Maintenance

Encourage energy providers to maintain, regularly inspect, and repair gas pipelines and electric utility lines, both overhead and underground, to ensure reliable and safe services with limited disruptions. To this end, the
City will inform energy providers of pending public works projects that provide opportunities to inspect or repair underground utility lines. [SO, AC, PA]

**IF-6.7: Electric Vehicles**

Work with energy providers to plan for and provide for the electricity needs of a growing EV network in Burlingame. [MP, AC]

**IF-6.8: Joint Use**

Work with energy providers to allow for their rights-of-way and easements to be considered for dual use as public open space, trails, parkland, community gardens, and other compatible passive recreational uses. [DR, SO]

**Telecommunications**

Access to efficient and affordable telecommunications infrastructure—including broadband, fiber optic, wireless (wi-fi), and emerging technologies—connects Burlingame to the world and can serve as an economic development tool, attracting businesses that require high-speed, reliable service. Burlingame will work to establish a wide range of innovative telecommunications systems and services to attract and retain state-of-the-art businesses, provide information and communication access for all residents, and facilitate public education.

**Goal IF-7: Install state-of-the-art technology and telecommunications infrastructure to support Burlingame residents, businesses, institutions, and public agencies.**

**IF-7.1: Access and Availability**

Work with service providers to ensure access to and availability of a wide range of state-of-the-art telecommunications systems and services for households, businesses, institutions, public spaces, and public agencies throughout Burlingame. [FB, PA]
IF-7.2: Infrastructure Co-location

Encourage the co-location of telecommunications facilities, and work with service providers to site telecommunications facilities on City-owned property and within public rights-of-way wherever possible. [DR, PA]

IF-7.3: Incorporation into Public Places

Establish requirements for the incorporation and accessibility of state-of-the-art, attractive telecommunications systems and services for public use in public buildings and spaces. [DR, PI]

IF-7.4: Incorporation into New Development

Establish requirements for the installation of state-of-the-art internal telecommunications technologies in new office, commercial, and hotel developments. [DR]

IF-7.5: Fiber Optic Cable Access

Encourage the expansion of fiber optic cable infrastructure throughout the city. [DR, PA]

IF-7.6: Public Wireless Hot Spots

Encourage the installation of public wireless network “hot spots” throughout the city, but prioritized in Downtown, the Bayfront, and along Broadway. [DR, MP]

IF-7.7: Facility Upgrades

Require service providers to upgrade existing facilities as part of permit or lease renewals, and encourage the use of newer technologies that allow the facility components to be reduced in size or improve screening or camouflaging. [DR, PA]

IF-7.8: CCTV

Consider establishing closed circuit television systems (CCTV) at locations in Burlingame that would benefit from such technology. [SO]
IF-7.9: Antenna Aesthetics

Implement measures that require above-ground telecommunications infrastructure—and antenna in particular—to be shielded, integrated into buildings, or otherwise utilize stealth approaches to minimize their aesthetic impacts. [DR]

IF-7.10: Telecommunications Master Plan

Prepare and regularly update a Telecommunications Master Plan with regulations and guidelines for wireless and emerging technology installation. [MP, SO, FB]