1. Our Natural Community

GOAL

South Pasadena will promote clean air, clean water, and habitat for native species, prevent urban heat islands, reduce stormwater runoff, and promote a greener downtown, a healthier lifestyle and nature based-recreation.

No single park, no matter how large and how well designed, would provide citizens with the beneficial influences of nature; instead parks need to be linked to one another and to surrounding residential neighborhoods. —Frederick Law Olmsted

Part B, Chapter 1: Our Natural Community 31

A. ECOLOGICAL FRAMEWORK

South Pasadena's basic life support depends on clean air, availability and quality of potable and recycled water, and careful management of risks posed by climatic extremes and resulting drought, or urban heat. Quality of life, community health, wellbeing, and economy are improved with access to natural environments, active recreation, physical activity and social contact.

The existing infrastructure takes a disaggregated view of built environment functions. Gray infrastructure in the form of drainage channels, detention areas, streets, and utility corridors are designed, operated, and maintained separately. However, our built environment and our ecological environment are connected and interrelated.

In contrast to the current specialized or "silo" method, a green infrastructure is a system-thinking approach that focuses on how the pieces interact to produce a more naturally effective system. Green infrastructure is the network of green spaces that protects natural ecosystems and provides associated benefits for people, wildlife, and the economy.

Green infrastructure includes core areas and connecting corridors. The core areas include all the open spaces, the Arroyo Seco watershed, parks, and other natural areas. The green corridors that include the watershed area, streets, alleys, and utility easements could maintain connectivity and provide for human and animal movement, and seed and pollen dispersal. In some cases, the corridors extend beyond city limits and will require collaboration with neighboring jurisdictions. Interconnected landscapes



Figure B1.1 Inventory of existing Green Infrastructure Assets.

are more beneficial and resilient than isolated environments.

The General Plan identifies the need and potential to develop an integrated and connected Green Infrastructure system in South Pasadena. In the short term, the City should lead an effort to prepare a Green Infrastructure Framework. Following are recommended steps to preparing a Green Infrastructure Framework:

- 1. Develop an Overarching Vision:
 - Identify the existing assets, opportunities, risks, and vulnerabilities, including climatic demands on scarce resources;
 - Identify habitats, plants, and wildlife;
 - Location and design of the corridors should be based on physical, chemical, and biological condi-

tions and constraints;

- Close gaps between the natural areas;
- Consider indirect impacts to adjoining communities; and
- Evaluate compatibility with downstream corridors and adjacent jurisdictions' natural environment.
- 2. Create Inter-agency Partnership: Collaborate with different disciplines, such as biologists, ecologists, and landscape architects



Figure B1.2 Green Infrastructure Framework Concept. Besides public parks and streets, the framework identifies opportunities to partner with school for limited public use of their grounds, and the use of Edison easement as a green corridor. A longer term project could be to study the feasibility of a future capping 110 with public parks.

to resolve competing interests.

- 3. Prepare Design and Maintenance Standards: Standards would promote consistent implementation citywide. Enhanced connectivity for humans could potentially bring predatory wildlife into the City. Safety should be paramount design consideration.
- 4. Funding: Leverage existing Capital Improvement Program funds

to secure grants and private sector investment.

5. Pilot Projects: Carry out demonstration projects that are simple, shortterm, and low-cost solutions with remarkable impacts on the natural environment.

B. GREEN INFRASTRUCTURE BENEFITS

Green infrastructure provides multiple benefits:

Clean Air: Green infrastructure can reduce air temperature. The plants sequester carbon, mitigate ground-level ozone, and screen particulates in the air.

Clean Water: Green infrastructure acts as a filter for stormwater runoff, cleaning the water as it flows through the vegetation.

Access to Nature: Green infrastructure is used by a range of natural and recreational users, allowing physical activity. Education: Opportunities for youth and adults to learn about their environment. Control Flood Risk: Green infrastructure can reduce public costs for stormwater management. Stormwater runoff from asphalt, concrete, and similar impervious surfaces moves quickly, increasing peak flows and volumes. As water moves more slowly through vegetative surfaces, flooding risk is reduced.

Economic Return: Green infrastructure provides key aesthetic value for a community, and provides a draw for residents and visitors. Green jobs can also be generated from the preservation and promotion of green infrastructure. The draw of residing in proximity to green infrastructure is considered an asset reflected in increased property values.

Social Capital: Green infrastructure provides a setting for community interaction and pride.

Wildlife Habitat: Green infrastructure, with appropriate safety and design considerations, creates a continuous habitat to provide movement, protection, and nutrients needed for various wildlife, insects, and birds.



adjacent cities, and

South Pasadena

Neighborhoods within

cultural resources; andOpportunities to integrate public art

distinctive natural and

distinctive natural and

cultural resources; and

· Opportunities to

integrate public art

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Table B1.1. Benefits and Types of Green Infrastructure.

Community gardens,

open spaces

pocket parks and other

Courtyards and yards

Local

Parcel

energy conservation, bio-

diversity (improve habitat

for wildlife), physical and

mental health

Policies and Actions

- P1.1 Maximize the interrelationship between the City's natural and built infrastructure to benefit people, wildlife, and the economy.
- A1.1a Develop an overarching Green Infrastructure Framework. 🗐 🚳 😣

Identify the existing assets, opportunities, risks, and vulnerabilities, including climatic demands on scarce resources; identify habitats, plants, and wildlife; locate and designs the corridors based on physical, chemical, and biological conditions and constraints; close gaps between the natural areas; consider indirect impacts to adjoining communities; and evaluate compatibility with downstream corridors and adjacent jurisdictions' natural environment.

- A1.1b Create an Inter-agency Partnership between different disciplines, such as biologists, ecologists, and landscape architects to resolve competing interests. (2) (2) (2) (2)
- A1.1c Prepare Design and Maintenance Standards for consistent citywide implementation. ⁽³⁾ ⁽³
- A1.1d Leverage existing Capital Improvement Program funds to secure grants and private sector investment in environmental enhancements and preparation for a more resilient community. 3
- A1.1e Carry out demonstration projects that are simple, short-term, and low-cost solutions with remarkable impacts on the natural environment. (3) (3) (3) (3)

🕉 Aging in Place



🕴 Vision Zero



South Pasadena is located in the South Coast Air Basin (SoCAB). This air basin contains the second largest urban area in the nation. The basin has California's largest cities, the most industries, over 17 million people, and millions of cars and trucks. The basin forms a low plain, bounded on the west by the Pacific Ocean, and surrounded on the other sides by mountains, which channel and confine the air flow.

The region lies in the semi-permanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This climatological pattern is interrupted by periods of extremely hot weather, winter storms, and Santa Ana winds. The air quality in South Pasadena is influenced by natural geographic and climatic conditions, as well as local and regional development, transportation, and land use practices.

Air pollution is a regional issue. Smog produced elsewhere is carried by

Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NOx) and reactive organic gases (ROG). Nitrogen oxides are formed during the combustion of fuels, while reactive organic gases are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it mostly occurs in serious concentrations between the months of May and October. Ozone is a pungent, colorless toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, persons with respiratory disorders, and people who exercise strenuously outdoors.

Particulate matter is comprised mostly of dust particles, nitrates and sulfates. The fine particulates are generally associated with the engine fuel combustion processes and being formed in the atmosphere as a secondary pollutant through chemical reactions. Fine particulate matter poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Air pollution causes or contributes to everything from burning, watery eyes

and fatigue, to asthma and other respiratory diseases, lung damage, cancer, birth defects, and premature death (see Our Healthy Community).

South Pasadena is located south of the San Gabriel Mountains, closer to the City of Los Angeles. Cities further away from the mountains typically experience better ozone air quality than cities that are closer to the mountain range, where smog becomes trapped. However, particulate matter may be higher in the urbanized regions in and near Los Angeles, particularly in areas closer to the 110 freeway.

The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for the South Coast Air Basin which includes South Pasadena. The SCAQMD only has authority to regulate stationary sources, such as factories and refineries, for air pollution. Their incentive programs to help reduce mobile source emissions are purely voluntary. Given the SCAQMD's limited authority, any local efforts to directly and indirectly reduce mobile source emissions and thereby improve air quality fall to the City and its transportation and land use policies.

According to the American Lung Association in California, transportation sources comprise roughly 90% of smog forming NOx pollution in the region. In South Pasadena, reducing air pollution is contingent on reducing the number of vehicles miles traveled (VMT) in the city. The South Pasadena General Plan reduces VMT by:

• planning for and providing feasible and convenient alternative travel facilities and modes that emit fewer pollutants per person;

- striving to ensure that trip generators (such as homes) and destinations (parks, shops and businesses) are located near one another to allow for shorter trips;
- promoting walkable and mixed-use development in the downtown area, along key corridors, and neighborhood center sites that are served by high quality transit systems; and promoting complete street policies
- promoting complete street policies that encourage walking and use of public transit, thereby reducing traffic congestion and improving air quality.

Green Infrastructure in the form of trees and plants absorb certain pollutants from the air through leaf uptake and contact removal. South Pasadena's widely planted trees and plants also cool the air and slow the temperature-dependent reaction that forms ground-level ozone pollution (smog).

Greenhouse Gas Emissions

Assembly Bill (AB) 32—the Global Warming Solutions Act of 2006 requires California to reduce statewide greenhouse gas (GHG) emissions to 1990 levels by the year 2020. The General Plan and its specific actions to reduce community related and City operations-related greenhouse gas emissions would facilitate implementation of AB 32 and would lay the framework to help meet future goals.

Senate Bill 375 requires regional transportation planning organizations (like SCAG) to develop a Sustainable Community Strategy (SCS) designed to coordinate regional transportation plans with land use intensities to reduce future GHG emissions. Local adherence to SB 375 and the regional SCS is not mandatory; however, the goal is to motivate local governments to align their land use planning with the adopted SCS to capitalize on the new CEQA streamlining opportunities (SB 97 updates). SB 375 provides financial and regulatory incentives to achieve the target GHG reductions, including streamlined environmental review for projects that conform to an adopted SCS. The CEQA streamlining provisions require local governments to define the extent of GHG production and identify ways to substantially reduce GHGs in the future to minimize a potentially significant environmental impact. If the General Plan reduces city-wide emissions to a level that is less than significant, then a later project that complies with the requirements may be found to have a less than significant impact. This will allow the applicant to complete a consistency analysis for their project instead of a project specific analysis for greenhouse gases. Potential improvements in air quality is an additional benefit to pursuing GHG reductions for South Pasadena.

Policies and Actions

P1.2 Promote alternative transportation modes like walking, biking, and transit that reduce emissions related to vehicular travel.

A1.2 Continue to channel Federal, State and Local transportation funds to programs, and infrastructure improvements that reduce air pollution through the promotion of walking, biking, ride-sharing, public transit use, the use of alternative fuel vehicles or other clean engine technologies.

P1.3 Promote the use of energy-efficient vehicles.

- A1.3a Continue to control and reduce air pollution emissions from vehicles owned by the City by expanding the use of alternative fuel, electric, and hybrid vehicles in City fleets.
- A1.3b Promote the installation of alternative fueling stations and electrical charging stations at businesses and residences. <a>>
- P1.4 Minimize the adverse impacts of growth and development on air quality and climate.
- A1.4a Implement policies and actions of the Climate Action Plan, adopted on December 16, 2020. 3
- A1.4b Minimize the use of asphalt within the City and mitigate the sources of urban heat island impacts. (3) (3)



🏠 Social Equity

Vision Zero

D. WATER



South Pasadena's water management systems are organized around three major uses of water: drinking water, wastewater, and storm water. The council adopted an Urban Water Management Plan in October 2021 that meets State standards for the City's management of its public water system.

As the state absorbs growing climate change impacts, with increasing signs of more frequent drought conditions, the City will need to find ways to improve water conservation and retain rainfall using a Green Infrastructure approach. More than half the water used by households goes to landscaping.

To counter pressure on increasing stormwater management requirements and overburdened infrastructure systems, Green Infrastructure approach to water management uses natural systems, or engineered systems that mimic natural processes to reduce water pollution and flooding. The existing "gray" infrastructure for stormwater management uses curbs, gutters and underground piping

to convey water away from developed land. Green infrastructure relies heavily on water infiltration, evapo-transpiration and collection to capture raindrops where they fall.

Natural systems, such as plants and soils, as well as cisterns and rain barrels, provide these functions to manage rainwater onsite. Therefore, green infrastructure is a more cost effective means of maintaining water quality. By weaving natural processes into the built environment, green infrastructure provides both stormwater treatment and flood mitigation benefits.

Article III of Chapter 335 of the South Pasadena Municipal Code adopted the state's 2015 Model Water Efficient Landscape Ordinance, which established a structure for planning, designing, installing, maintaining and managing water efficient landscapes



Figure B1.3. South Pasadena Water Use. Outdoor watering of lawns and gardens makes up approximately 58% of home water use. By reducing outdoor water use either by cutting back on irrigation or planting drought tolerant landscaping, overall water use can be reduced dramatically. Source: South Pasadena Public Works.

in new construction and rehabilitated projects.

Green Streets: The Public Works Department requires new and reconstructed streets and roadway projects and CIP projects conducted within public streets which add or disturb at least 10,000 square feet of impervious surface to consider Green Streets. Green Streets are defined as public right-of-way areas that incorporate infiltration, biofiltration,

and/or storage to collect, retain, or detain stormwater runoff as well as a design element that creates attractive streetscapes. Low Impact Development (LID): The City requires LID for projects that are required to incorporate stormwater mitigation measures. LID is a strategy for improving the quality runoff by requiring that development projects direct runoff to treatment systems consisting of vegetation and soil.

Policies and Actions

- P1.5 Promote integration of Green Infrastructure into storm water management systems.
- A1.5a Prepare a citywide Green Infrastructure Framework. 🖲 🚳 📾
- Adopt storm water regulations that are more supportive of green infra-A1.5b structure. 🛞 🧇
- Establish programs to promote the use of captured rainwater, gray A1.5c water, or recycled water. 🛞 🧇
- A1.5d Establish protocols for the transition of conventional gray infrastructure to multi-functional natural system green infrastructure. 🖲 🚳
- Develop simple, small, and low-cost demonstration green infrastructure A1.5e projects both in the public and private realm. 🛞 🧆 🐲
- Review and revise development regulations to establish a green ap-A1.5f proach in new developments. Minimize impervious areas. Develop new projects and retrofit existing surfaces to reduce runoff through infiltration. 🔞 🧇
- Incorporate Green Street elements into repaying projects on a citywide A1.5g basis. 🧐 🧇 🐲
- A1.5h Establish programs to promote the use of green roofs, bioswales, pervious materials for hardscape, and other stormwater management practices to reduce water pollution. 3
- A1.5i Establish design standards for the City rights-of-way including street tree planting and design that incorporates filtration and water retention. 🛞 🤣 💓
- A1.5i Conduct demonstration and pilot projects, focusing on testing and developing green partnerships. 🛞 🧆 🐲
 - Aging in Place





E. TREES



Trees are the largest and most visible component of green infrastructure. Their habitats range from naturally occurring areas along the Arroyo Seco and Monterey Hills to the physical fabric of the city where they are planted along streets, in parks and open spaces, on private yards and vacant lots, on institutional campuses, or elsewhere. Trees enhance urban life. A city-wide urban tree canopy can serve a vital role in keeping built-up areas cool, reducing air-conditioning costs, absorbing stormwater and providing habitat for birds and other wildlife. They also provide habitat values for humans by producing oxygen and absorbing pollutants.

South Pasadena prides itself in being the City of Trees. It's streets are lined with numerous species of native trees such as Oaks, Magnolia, Sweetgum, and Sycamore. South Pasadena has been designated as a Tree City USA for 23 years.

South Pasadena maintains over 11,000 trees in the public realm. Of the

mature trees, over 40% are over 20-inches in diameter; and over 55% are over 30-feet tall.

From 2013-2017 the City's urban forest was found to have:

- 423 trees with disease or declining health;
- 301 trees with poor structure;
- 37 trees tagged for inspection;
- 28 trees dead; and
- 24 trees with overhead spacing issues.

South Pasadena follows International Society of Arboriculture (ISA) Guidelines and the City's Municipal Code, Chapter 34 Trees and Shrubs. ISA has developed Best Management Practices (BMPs) for tree care standards and tree conservation and preservation practices. Chapter 34 of the Municipal Code prescribes requirements for tree removal and replacement.

Proper tree maintenance increases



Figure B1.4. South Pasadena Trees. Source: South Pasadena Public Works.

City of South Pasadena	Planning and Policy	Preservation	Maintenance	Planting	Risk Management
Planning	Х	Х			
Public Works (Parks Divi- sion)	Х	Х	Х	Х	Х
Urban Forestry Services	Х	Х	Х	Х	Х
Community					

Services

Table B1.2. City Agencies Involved in Street Trees. Source: City of South Pasadena.

the longevity of trees, reduces premature failures, and maximizes the benefits trees provide. Currently the trees are on a 4-year trimming cycle. Depending on species or location, trees may be trimmed more frequently. For example, trees on major arterial roads and fast growing tree species require more frequent tree trimming. The City also provides pruning services requested by residents that are approved by the City Arborist. If operating costs go up and revenues do not increase, the trimming cycle frequency may need adjustments. Tree maintenance is funded out of two accounts: Park Trees are funded through the General Fund and Median/Parkway Trees are funded through the Lighting and Landscape Maintenance District. The City has also established a reserve for Tree Removal and Replacements.

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The Parks Division of Public Works Department maintains the trees. The City contracts with Urban Forestry Services Contractor to provide regular tree maintenance, trimming and removal of dead or diseased trees.

Landscape Lighting and Maintenance District

Fees are collected through this District to maintain street lights, street trees and common areas (landscaping); trees are aging and all costs for tree and light maintenance are processed through this fee.

Heritage Tree Program

The Heritage Tree Program defines the process of nomination and designation of public trees to raise community awareness about their exceptional characteristics and contributions to South Pasadena's urban environment. Qualifying trees are:

- Of exceptional size, form, or rarity; or
- Recognized by virtue of its age, its association with or contribution to a historic structure or district, or its association with a noted person or historic event.

Heritage trees may be on either City or private property. Each candidate tree is assessed and evaluated by a review committee.

South Pasadena Tree Dedication Program

The City accepts donations of trees that meet the City's minimum requirements and conditions for planting. The Park Supervisor approves a location for planting, taking into consideration the site requirements and desirable tree species. Dedication trees can be donated to celebrate the birth of a child, to celebrate a special event, to honor a special person in your life, in memory of the deceased, etc. The planting of dedication or donation trees is not limited to these purposes.

South Pasadena Natural Resources and Environmental Commission

The Natural Resources and Environmental Commission (NREC) is a seven member body that is advisory to the City Council in all matters pertaining to energy, science and technology, and natural resources and the environment. The NREC assists the City in the planning, programming, use, and conservation of energy and natural resources, as well as administers the City's tree ordinance. In the past few years, the NREC has been instrumental in passing a plastic bag ban, and an expanded polystyrene (Styrofoam) ban. The NREC is currently updating the City's tree ordinance and tree removal permit hearing process, as well as exploring regulations requiring solar systems, graywater, and cool roofs.

South Pasadena Beautiful

The removal of beautiful trees on Milan Avenue led to the creation of South Pasadena Beautiful (SPB) in 1965. SPB believes that attractive, well-maintained public areas including parkways and medians are essential to livability, civic pride, and the city's economic well-being. Over the years, SPB has planted several hundreds of trees throughout the City and provided funding for over 400 trees in the City.

SPB is an all-volunteer organization that works in cooperation with many agencies, including the city government, other service organizations and volunteers. As a non-profit, it is able to move projects faster and go beyond what the City budget allows.

SPB has promoted sustainable gardening practices by offering workshops and lectures on native plants and tree care, by featuring drought-tolerant gardens in its annual Garden Tour and Golden Arrow Awards, and by promoting the planting of climate appropriate trees with its Tree Drive. SPB also sponsors educational talks and projects to encourage community members to act on their own to establish sustainable landscapes in their homes or businesses.

Each year, SPB organizes a project or event to help the City maintain its Tree City USA status. In past five years alone, South Pasadena Beautiful has donated over \$25,000 to the City for new trees on public property. SPB projects and events are funded by membership donations. Other funding is through small grants and fundraisers.

Issues/Threats

- 1. Sustained Drought, Age, and Disease Susceptibility: Southern California has endured five years of drought marked by record warm temperatures. The drought has left South Pasadena trees thirsty and prone to disease.
- 2. Lack of Information and Interest: Public education and marketing campaigns are needed to raise awareness (workshops, BMPs for tree care in city publications, utilize social media, educational programs for youth).
- 3. Lack of Funding: Shrinking funds makes it difficult to maintain the existing trees and plant new trees. Partnerships with non-government organizations and new sources of sustainable funding (City and external sources) need to be identified. A citizen stewardship program that engages the public in watering, weeding, and basic tree pruning could recruit, train, manage, and recognize volunteers as citizen foresters.

Policies and Actions

P1.6 Preserve, manage, and grow the tree canopy.

A1.6 Adopt an Urban Forest Management Plan. 🖲 🧆

The Urban Forest Management Plan will guide economically sustainable and environmentally friendly strategies for planting, maintaining, and funding trees on public and private property. The Urban Forest Management Plan should include best practices, design standards, tree palettes, implementation locations, integration into the Capital Improvement Program and Stormwater Program, incentives for property owners and requirements for developers, funding opportunities and ballot measures, and water conservation strategies.



Social Equity

