ENVIRONMENTAL PROTECTION AND CLIMATE ACTION

DRAFT - March 2024

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The City of Irvine is recognized as one of America's safest and most successful master-planned communities. Among the many unique characteristics of Irvine are the core community values that result in the City's history of environmental stewardship, taking steps to preserve open space, protecting the natural environment, and developing a community that fosters well-planned living, recreational, educational, and work environments.

VISIONING THROUGH ENVIRONMENTAL PROTECTION AND CLIMATE ACTION

From inception to the decorated community it has become, the City of Irvine ("City" or "Irvine") has thoughtfully approached growth and development through the lens of a climate-smart city inspired by the guidance of environmental stewardship.

Environmental stewardship is the practice of responsible and sustainable management of natural resources and ecosystems to ensure their health and vitality for current and future generations. Irvine remains committed to practicing environmental stewardship by implementing policies and initiatives that prioritize the conservation of biodiversity, reduction of carbon emissions, and protection of air and water quality. Climate-smart cities in California are urban areas that strategically address the challenges of climate change by integrating sustainable practices, resilient infrastructure, and emissions reduction strategies into their planning and development. Irvine operates as a climate-smart city, recognizing the importance of adapting to and mitigating the impacts of climate change while fostering a high quality of life for residents.

The City exemplifies its dedication to practicing environmental stewardship and operating as a climate-smart city through its comprehensive approach to environmental sustainability and proactive climate action initiatives. Several key factors furthering these efforts include:

Renewable Energy Initiatives : Irvine has demonstrated a commitment to renewable energy by striving to use 100 percent renewable energy in its operations. This includes supporting community-wide access to renewable electricity.

Green Infrastructure and Transportation Planning : The City emphasizes sustainable transportation measures, such as developing critical energy infrastructure like electric vehicle charging networks. The City also continues to plan, permit, and invest in transportation measures that reduce vehicle miles traveled and promote zero-emission vehicles that contribute to a more sustainable and eco-friendly transportation system.

Innovation in Carbon-Free Technologies : Irvine is dedicated to developing carbon-free energy technologies by supporting research, design, development, and early market deployment of new carbon-free energy sources, batteries, and energy storage technologies.

Community Engagement and Climate Preparedness : Irvine engages its community actively in climate action through programs like the Cool Block initiative. This program encourages residents to lead their neighbors in sustainability efforts, reduce climate emissions, and enhance local emergency preparedness. The City's focus on climate resilience, especially against climate-related disasters, showcases a forward-thinking and community-centered approach.

Adoption of Sustainable Building Practices : Irvine is committed to implementing new codes and standards to encourage energy-efficient and zero-carbon buildings. This reflects a commitment to sustainable development practices, aligning with the City's broader climate change goals.

Irvine ACHIEVES: Irvine ACHIEVES, a City Resolution (CC Reso 21-50) adopted in August 2021, focuses on achieving a zero-carbon local economy based on the latest climate science. It places a strong emphasis on environmental, economic, and social justice in all climate initiatives, actively involving community stakeholders and prioritizing the protection of vulnerable communities from environmental harm.

Through these practices, Irvine partners thoughtful and informed approaches along with dedication to addressing environmental protection and climate action to help further a more sustainable and resilient future for City residents.

GENERAL PLAN AND REGULATORY FRAMEWORK

Legislation in Senate Bill 1000 (2016) mandates that every city and county revise public policies to encompass environmental justice considerations. The California Office of Planning and Research allows Cities to decide their approach to addressing Environmental Justice in a manner consistent with general plan requirements outlined in Government Code Section 65300.5. The City of Irvine has decided to address Environmental Justice, identifying objectives and policies accordingly, within the Environmental Protection and Climate Action (EPCA) element, ensuring its integration amid the diverse range of environmental and climate-related topics also discussed in the element.

Environmental Justice aims to ensure fair distribution of environmental benefits and burdens regardless of socio-economic factors. It addresses historical disparities in exposure to hazards and access to resources, particularly affecting marginalized communities. Cities can practice environmental justice by involving communities in decision-making, implementing policies to address inequities, and investing in sustainable infrastructure for all residents. This approach not only fosters healthier environments but also contributes to long-term sustainability and equity. The City's EPCA element is designed to ensure Environmental Justice for all residents by addressing environmental and climate-related matters through mitigation and proactive measures that protect the environment and allow for addressing climate change.

RELATIONSHIP TO OTHER ELEMENTS

The EPCA Element of the 2045 General Plan plays a pivotal role in fostering a sustainable and resilient urban environment. This element intersects with various other elements of the general plan, emphasizing the interconnectedness of environmental considerations with broader planning goals. A summary of the relationship between the EPCA Element and other elements of the 2045 General Plan is as follows:

- **Land Use Element -** The Land Use and EPCA Elements work together to ensure that the development and use of land is done in a manner that protects the environment and promotes energy efficiency. This collaboration is aimed at balancing the City's desire to preserve the environment and create a resilient, eco-friendly urban landscape.
- **Housing Element -** Collaboration between the Housing and EPCA Elements ensures housing development is aligned with environmental goals by focusing on green building practices and resilient infrastructure. Together, they balance the need for homes with ecosystem protection and contribute to a harmonious, environmentally conscious urban environment.
- **Conservation and Open Space Element -** Synergy between the Conservation and Open Space Element and the EPCA Element ensures that open spaces are not only preserved, but also managed to enhance environmental resilience. Together, these elements create a holistic

approach that aligns with land conservation, climate protection, and sustainable practices, contributing to a resilient and ecologically vibrant community.

- **Circulation Element -** Interaction between the Circulation and EPCA Elements encourages the alignment of transportation planning with climate goals and emphasizes eco-friendly modes of travel as well as infrastructure resilience. Both elements work together to create a comprehensive strategy that maximizes urban mobility while minimizing environmental impact and fostering a climate-resilient, sustainable community.
- **Noise Element -** The Noise Element supports the EPCA Element efforts through aligning noise reduction efforts with climate action goals, such as promoting quieter transportation modes and energy-efficient infrastructure, strengthening the EPCA Element's objectives of reducing greenhouse gas emissions and fostering sustainable development practices. Together, these elements ensure a harmonious balance between noise management, environmental conservation, and climate resilience within the community.
- **Safety Element** - The collaboration between the Safety and EPCA Elements ensures that safety planning accounts for environmental considerations, such as worsened hazard conditions associated with a changing climate. Both elements work together to address safety concerns while promoting environmental stewardship and to achieve a sustainable and secure urban environment.

General Plan Element objectives related to the EPCA Element are as follows:

Circulation Element: C-2, C-3, C-5, C-7, C-8, C-10, C-11, C-12	**Safety Element: S-1, S-2, S-3, S-4, S-5, S-6, S-7**
Housing Element: HE-L, HE-M	**Noise Element: N-4**
Conservation and Open Space Element: COS-1, COS-2, COS-3, COS-4, COS-5, COS-6, COS-7, COS-8, COS-9, COS-10	**Land Use Element: LU-1, LU-2, LU-4, LU-6, LU-7, LU-10, LU-11, LU-12**

EXISTING CONDITIONS

Exploration of the City's current conditions helps lay the foundation for crafting strategies that resonate with the unique needs and aspirations of residents, informing targeted and inclusive environmental initiatives and ensuring that climate actions are effective and reflective of the City's value. An overview of the City's existing conditions is as follows.

POPULATION

Irvine is expected to experience significant population growth due to its favorable location, strong economy, and high quality of life, leading to increased demands for housing, infrastructure, and services. Effective land use planning is essential to address this growth and mitigate challenges such as urban sprawl and traffic congestion. Striking a balance between housing, commercial areas, and recreational spaces is crucial for ensuring the City's sustainability and functionality.

RESIDENTIAL DEVELOPMENT

The Housing Element, certified for the 2021-2029 6th Cycle, allocates sites for 57,656 residential units, meeting RHNA (Regional Housing Needs Allocation) requirements and housing statutes. Conservation efforts are prioritized to prevent urban sprawl and preserve natural features, particularly in designated Focus Areas like the Greater Irvine Business Complex Area, Greater Spectrum Area, and Great Park Neighborhood Transit Village.

ECONOMIC DEVELOPMENT

Irvine's strategic land use planning has been instrumental in fostering economic vitality by attracting businesses, industries, and educational institutions, creating a dynamic urban environment. Key employment centers such as the Irvine Spectrum, Irvine Business Complex (IBC), and University Research Park (URP) have helped establish Irvine as a hub for research and technology companies. These employment hubs attract a significant daily influx of individuals, contributing to Irvine's bustling business landscape and reinforcing its role as a crucial economic engine for the city.

Irvine Spectrum Center

EDUCATION

University of California, Irvine

In Irvine, the University of California, Irvine (UC Irvine), alongside other prestigious institutions such as Concordia University and Irvine Valley College, provides a diverse range of higher education opportunities. Additionally, the City hosts regional campuses for universities like Brandman University, California State Fullerton, Pepperdine, University of Southern California (USC), and the University of La Verne, as well as the UC Irvine School of Law and Western State College of Law. With a multitude of educational options, including UC Irvine's national prominence, Irvine sees a substantial influx of over 40,000 students, faculty, and visitors, significantly impacting its daytime population and community services.

TRANSPORTATION

The City of Irvine has a varied transportation network, including buses, light rail, trains, bike paths, and pedestrian walkways, facilitated through partnerships with the Orange County Transportation Authority (OCTA), Amtrak, iShuttle, and Spectrumotion, a free rideshare association offering commutes to the Irvine Spectrum area.

Irvine Station

ENERGY

Irvine's electrical supply is managed by the Orange County Power Authority and accessed by customers via Southern California Edison's (SCE) infrastructure. There are seven substations strategically located throughout the City, forming a resilient network connecting to regional power sources. Irvine's natural gas is provided by the Southern California Gas Company.

WATER, WASTEWATER, AND STORMWATER

Irvine's drinking water needs are met through a blend of water sources, with 35 percent sourced from the Metropolitan Water District (MWD) of Southern California, drawing from the Colorado River and Northern California. The remaining 65 percent comes from local groundwater wells managed by the Irvine Ranch Water District (IRWD). Wastewater conveyance and treatment are overseen by IRWD, with sewage

conveyed to their Michelson Water Recycle Plant (MWRP) and Los Alisos Water Recycle Plant, except for the Irvine Business Complex area, which is managed by the Orange County Sanitary District. Stormwater management falls under the Public Drainage Program, responsible for maintaining drainage facilities, conducting inspections, erosion control, debris cleaning, and ensuring water quality through the Clean Water Program.

OPEN SPACE

Irvine Open Space Preserve

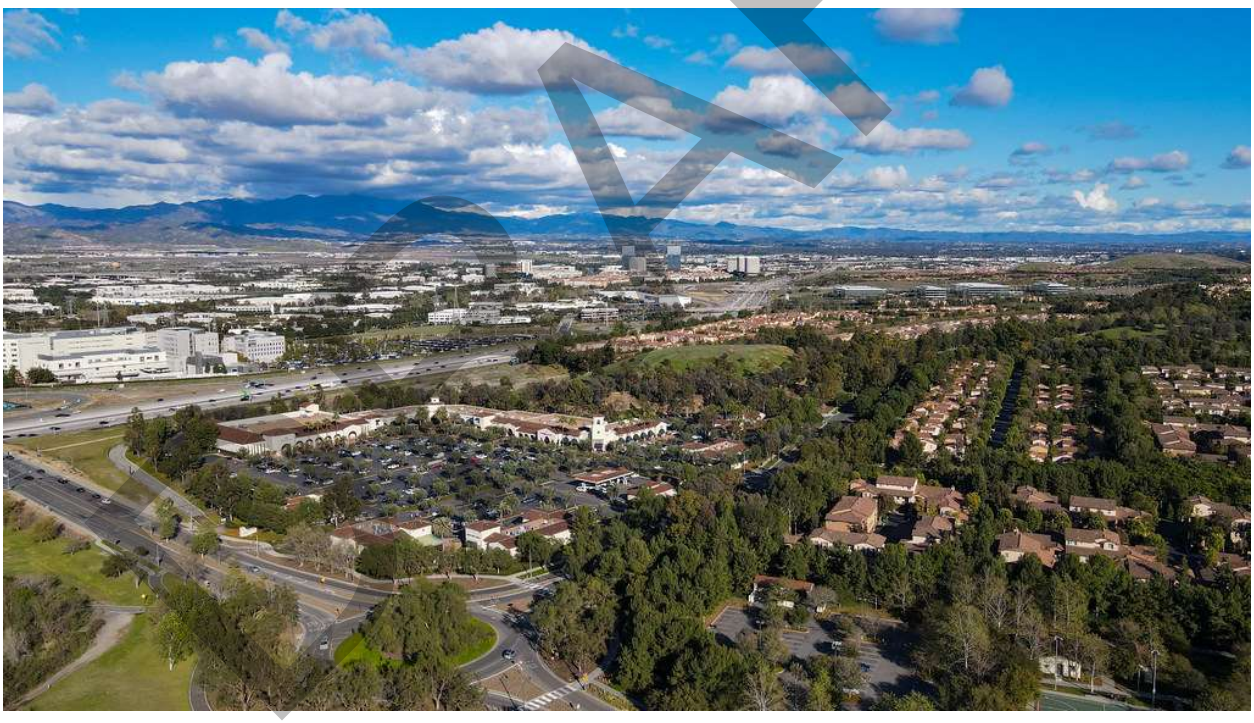
Irvine offers residents and visitors an extensive array of outdoor spaces, including approximately 22 community parks, over 40 neighborhood parks, and 6,500 acres of preserved open space, totaling over 11,000 acres dedicated to open space. These resources encompass a variety of environments, such as wetlands, oak woodlands, grasslands, regional parks, and trails, providing diverse recreational opportunities. Notable locations like the Jeffrey Open Space Trail, Bommer Canyon, and Quail Hill exemplify the City's commitment to preserving natural landscapes through its historic Open Space Initiative. The centerpiece of Irvine's recreational landscape, the Great Park, spans 1,300 acres and is poised to redefine recreational standards with its extensive amenities and open spaces, enriching the living environment for residents and the broader community.

REGIONAL COLLABORATION

Regional collaboration networks are essential for leveraging collective efforts to address environmental challenges effectively. These networks operate across administrative boundaries, focusing on shared geographic areas to develop consistent strategies for protecting ecosystems like watersheds and coastal areas. By promoting cross-sectoral cooperation, these collaborations engage organizations in addressing issues such as greenhouse gas reduction, climate resilience, and sustainable resource management. The City actively participates in regional initiatives like the Wildland-Urban Interface Climate Action Network and the Orange County Cities Energy Partnership to contribute to environmental protection and climate action efforts.

- **Wildland-Urban Interface Climate Action Network** - The University of California Office of the President awarded a $5.5 million grant to establish the Wildland-Urban Interface Climate Action Network (WUICAN), aimed at fostering a resilient relationship between society and wild landscapes. WUICAN plans to support community leaders in assessing climate action needs and designing responses in collaboration with policy experts. Leveraging innovative climate research and educational initiatives, WUICAN aims to develop science-based best practices for addressing climate risks in the wildland-urban interface. The organization includes the City of Irvine, Irvine Ranch Conservancy, Irvine Ranch Water District, Laguna Canyon Foundation, and Borrego Valley communities, among others.
- **Orange County Cities Energy Partnership** - Through the Orange County Cities Energy Partnership, the City collaborates with SCE, the Southern California Gas Company, and neighboring cities to identify projects to improve long-term energy efficiency in municipal operations by implementing projects and promoting energy conservation. The benefits of the Energy Partnership include rebates and incentive programs, and technical assistance. The Energy Partnership is funded by ratepayer funds, managed by SCE and the Southern California Gas Company, under the guidance of the California Public Utilities Commission.

LOOKING TO TOMORROW



Increased population, residential development, and economic development have substantial implications for a city's need to practice environmental protection and climate action. Provided below are some key topic areas Irvine is considering based on existing conditions and the future growth and development in the City projected over the next 20 years:

- **Resource Consumption and Waste:** A growing population and increased economic activities often lead to higher resource consumption and greater waste generation. It puts a strain on natural resources, increases energy demands, and exacerbates issues related to waste disposal and management.

- **Urbanization and Land Use Changes:** Rapid residential and economic development can result in urban sprawl and changes in land use. This may lead to loss of green spaces and habitat fragmentation. Urbanization also contributes to the heat island effect, impacting local climates.
- **Transportation Emissions:** As the population grows, so does the demand for transportation. Increased residential and economic activities can lead to higher emissions from vehicles and industrial sources, contributing to air pollution and greenhouse gas emissions.
- **Infrastructure and Energy Demands:** Meeting the needs of a growing population and expanding economic activities requires more infrastructure and energy. The construction of buildings, roads, and other infrastructure contributes to energy consumption and may result in increased emissions if not designed and constructed with sustainability in mind.
- **Water and Air Quality Concerns:** Greater demand for housing and economic development can stress water resources. Additionally, industrial activities may lead to air and water pollution. Ensuring sustainable water management practices and implementing air quality controls become crucial.
- **Vulnerability to Climate Change:** A larger population and increased development make a city more vulnerable to the impacts of climate change. This includes the risks of extreme weather events, sea-level rise, and disruptions to critical infrastructure.

To address these challenges, the City will continue identifying, drafting, and implementing comprehensive environmental protection and climate action strategies. This includes sustainable urban planning, energy-efficient buildings, promotion of public transportation, waste reduction and recycling programs, green infrastructure development, and policies that encourage sustainable practices in both residential and commercial developments. Irvine's approach seeks to strike a balance between growth and environmental sustainability to ensure a resilient and livable future for all residents.

The City of Irvine recognizes the critical importance of environmental stewardship and climate action in safeguarding the quality of life for its residents. As such, we are committed to prioritizing decisions that prioritize environmental protection and advance climate action initiatives. By integrating sustainable practices into our planning, policies, and projects, we aim to foster a healthier, more resilient community while preserving our natural resources for future generations.

ENVIRONMENTAL AND CLIMATE CONSIDERATIONS

As stewards of sustainable urban development, Irvine recognizes the intricate relationship between human activities, environmental well-being, and the imperative to mitigate climate change. Environmental and climate considerations discussed herein help guide the City's commitment to fostering a resilient, low-impact, and climate-conscious community.

SENATE BILL 1000

An Environmental Justice Community is an area with the highest risk of pollution exposure, stemming from vehicular emissions and daily business activities, impacting residents who already face socioeconomic and health challenges. These areas are at risk of facing unequal opportunities for a healthy and prosperous life. The City employs CalEnviroScreen (CES, Version 4.0), a mapping tool, to identify vulnerable areas based on 21 indicators measuring pollution exposure and quality of life. Those communities that fall in the top 25 percent are considered disadvantaged or environmental justice communities. The identification of such communities helps to guide the City's policies in prioritizing the improvement of environmental conditions, enhancement of public access, and the promotion of civic engagement.

The City is committed to ensuring that all communities within its jurisdiction have equitable access to beneficial environmental standards and protections, striving to address disparities and mitigate environmental hazards to safeguard the health and well-being of all residents. Through inclusive policies, proactive measures, and community engagement, the City has been able to create a sustainable and resilient environment where every individual and neighborhood can thrive, regardless of background or socioeconomic status.

The CalEnviroScreen 4.0 Mapping Tool identifies the Portola and Great Park communities as a disadvantaged community (DAC) based on proximity to the closed El Toro Marine Corps Air Station (MCAS El Torro), it's prior use, and remediation efforts. In 1993, as authorized by the Defense Base Closure

and Realignment Act of 1990, the closure of MCAS El Toro was announced, with operational closure taking place in July 1999. Out of the approximately 4,700 acres, around 1,000 were transferred to other federal and state agencies, with most of the remaining acres transferred to the City in 2005.This transfer includes the development of Orange County Great Park, alongside various residential communities, and commercial businesses.

The Navy completed the initial cleanup to industrial standards and since then, further remediation has taken place and continues to take place in accordance with all applicable standards, including those required for sites that have been and will be developed for residential or other uses. Reclassification of the Portola and Great Park communities is in process and once completed, will remove their "area of interest" classification.

GREENHOUSE GAS EMISSIONS

Greenhouse gases (GHGs) are gases in the Earth's atmosphere that trap heat, leading to the greenhouse effect. The primary greenhouse gases include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated gases. While these gases are essential for maintaining a habitable temperature on Earth, human activities, particularly the burning of fossil fuels, deforestation, and industrial processes, have significantly increased their concentrations. This human-induced buildup intensifies the greenhouse effect, contributing to global warming and climate change. In 2022, the California Air Resources Board released the 2022 Scoping Plan for Achieving Carbon Neutrality. Initiatives in the Scoping Plan are aligned with recent legislative targets aiming to reduce GHGs, including AB 1279, which seeks to lower GHG emissions by 85% to 1990 levels by 2045, and SB 32, which requires a reduction in GHGs by at least 40% below 1990 levels by 2030.

Cities play a pivotal role in mitigating climate change as they are major contributors to greenhouse gas emissions. The impacts of climate change, such as rising temperatures, extreme weather events, and sea-level rise, pose substantial risks to urban communities. Per a 2022 study conducted by Ascent Environmental, the top three contributors to GHG emissions in the City are:

- On-Road Transportation
- Nonresidential Building Energy
- Residential Building Energy

To safeguard the well-being of residents and the environment, Irvine will prioritize reducing GHGs. Mitigating climate change also aligns with broader sustainability goals, fostering healthier and more resilient communities while preserving natural resources for future generations.

AIR AND WATER QUALITY

Protecting air and water quality is not only a public health imperative but also essential for creating sustainable, livable urban environments. Cities encounter various threats to air and water quality, primarily stemming from industrial activities, vehicular emissions, improper waste disposal, and inadequate wastewater management.

Industrial processes often release pollutants into the air and water, contributing to environmental degradation. Vehicle exhaust emissions, a significant source of air pollution in urban areas, release pollutants like nitrogen oxides and particulate matter. Improper disposal of waste, including hazardous materials, can contaminate water sources and soil. Insufficient wastewater treatment can lead to the discharge of pollutants into rivers and oceans, affecting aquatic ecosystems.

Air and water quality protection is crucial for the health and well-being of urban populations. Cities often face challenges related to pollution, which can have significant adverse effects on residents' respiratory health, cardiovascular well-being, and overall quality of life. Poor air quality, characterized by high levels of pollutants like particulate matter and ozone, is linked to respiratory diseases and can exacerbate existing health conditions. Contaminated water sources pose risks to public health, causing waterborne diseases, and negatively impacting ecosystems.

The City of Irvine is within the South Coast Air Basin (SCAB), which includes all of Orange County, the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and the San Gorgonio Pass area in Riverside County. The South Coast Air Quality Management District (SCAQMD) operates air quality monitoring stations throughout the SCAB. SCAQMD has adopted a series of air quality management plans (AQMPs) to meet the California Ambient Air Quality Standards and National Ambient Air Quality Standards. California Ambient Air Quality Standards are set by the California Air

Resources Board (CARB) and are designed to regulate the concentration of specific pollutants in outdoor air. National Ambient Air Quality Standards are federal standards that set maximum allowable concentrations for criteria pollutants to protect public health with an adequate margin of safety. Each AQMP is required to demonstrate compliance with all applicable Federal Clean Air Act requirements, address federal planning requirements, and incorporate new and significant scientific data. The most recent AQMP highlights additional strategies, especially related to mobile sources, to meet federal criteria pollutant standards within the timeframes allowed.

Watershed cleanup at San Diego Creek

The City is required by a federal permit to manage stormwater runoff to protect water quality and prevent pollution of the ocean. Unlike sewage, stormwater runoff is not treated before entering water bodies. The Storm Water Runoff Management Programs aim to safeguard the quality of receiving water bodies. Irvine's drinking water is safe and meets or exceeds state and federal regulations. The Irvine Ranch Water District (IRWD) conducts extensive testing to ensure high-quality water. As previously noted, approximately 35% of Irvine's water is sourced from the Metropolitan Water District of Southern California, while the remaining 65% comes from IRWD's local groundwater wells managed by the Orange County Water District.

Irvine will continue to take proactive measures to regulate emissions, manage waste effectively, and implement sustainable urban development practices through a comprehensive and integrated approach involving regulatory measures, technological advancements, and community involvement. The City will continue implementing sustainable water management practices, including water conservation measures, wastewater recycling, and the development of alternative water sources. Irvine will also continue to focus on reducing air pollution through measures such as promoting public transportation, adopting clean energy initiatives, and implementing stricter emission standards.

ENERGY CONSUMPTION

Energy plays a central role in environmental protection and climate action, with significant implications for both local and global sustainability. The production and consumption of energy are major contributors to greenhouse gases, a key driver of climate change. Fossil fuel-based energy sources release carbon dioxide and other pollutants, intensifying the greenhouse effect and leading to temperature rise. The primary supplier of retail natural gas to Irvine is the Southern California Gas Company. The primary supplier of retail electricity to Irvine is the Orange County Power Authority, with Southern California Edison delivering the electricity and maintaining the grid.

To mitigate climate change and promote environmental sustainability, cities must transition to cleaner and more sustainable energy alternatives. By adopting renewable energy sources and implementing energy efficiency measures, Irvine aims to reduce its carbon footprint and contribute to the global effort to combat climate change. Irvine also aims to enhance energy efficiency in buildings, transportation, and infrastructure, reducing overall energy demand and decreasing associated environmental impacts. With community engagement critical for the success of sustainable energy initiatives, the City will further efforts to educate residents about the benefits of renewable energy, encourage energy conservation practices, and involve the community in decision-making processes to foster a collective commitment to environmental protection and climate action.

WASTE MANAGEMENT

Waste management plays an integral role in environmental protection and climate action by addressing the environmental impact of excessive waste generation and promoting a circular economy. The traditional linear model of "take, make, dispose" contributes to landfills, pollution, and resource depletion. The impact of waste on cities is profound, influencing environmental, economic, and social aspects of urban life. Improper waste management leads to overflowing landfills, soil contamination, and air and water pollution. Landfills emit greenhouse gases, contributing to climate change. Additionally, the extraction and processing of raw materials for new products consume significant energy and resources.

Types of waste include:

- Solid Waste - common household-variety trash with little or no liquid included.
- Wastewater - all liquid waste dumped in the sewer system via drains and toilets in households and businesses.
- Green waste - waste generated from maintaining landscaping, including grass and tree clippings.
- Biosolids - solids remaining after treating wastewater.

Michelson Water Reclamation Plant. Source: Irvine Ranch Water District

It should be noted that many common products (paint, fertilizers, household cleaners), as well as many commercially used chemicals, are considered “hazardous.” Hazardous waste can show up anywhere, including household waste, wastewater, green waste, or biosolids. Residential, institutional, regional, commercial, and industrial solid waste is presently collected by private firms, with residential and village commercial collections franchised by the City and transported directly to the Frank Bowerman landfill. In Irvine, wastewater is transported through the IRWD collection system to the Michelson Water

Reclamation Plant for treatment, enabling its reuse in landscaping, agricultural irrigation, and various non-potable applications.

The county operates a Household Hazardous Materials Collection Center at the City of Irvine Corporate Yard in Planning Area 12 (Oakcreek). Many hazardous materials, such as motor oil and antifreeze, are recycled or used for fuel. Residues of treated hazardous wastes (solid and liquid) are currently disposed of at specially permitted disposal and storage facilities. No such sites exist in Orange County and, therefore, materials must be transported to sites out of the county or out of state.

Additionally, the City has implemented three-cart waste collection in alignment with state law which requires all California residences and businesses to separate organic waste from other trash and non-organic recyclables. Irvine will further the practice of efficient waste management by educating residents on responsible consumption and disposal, encouraging the development and use of recycling programs, incentivizing businesses to adopt sustainable packaging, and collaborating with local businesses for responsible waste disposal to contribute to effective waste reduction. Moving away from the linear model, the City is embracing a circular economy approach of regenerative practices, which fosters sustainability, job creation in the recycling industry, and community engagement. By prioritizing waste reduction and recycling, Irvine will look to mitigate these negative effects, conserve resources, and reduce the carbon footprint associated with the production and disposal of goods.

CLIMATE CHANGE

Climate resilience refers to a community's capacity to anticipate, prepare for, respond to, and recover from the adverse impacts of climate change. It involves building systems, infrastructure, and communities that can withstand, recover from, and adapt to the changing climate conditions. Adaptation, on the other hand, specifically focuses on adjustments made to social, economic, and environmental practices to minimize vulnerability to climate change and exploit new opportunities. Both concepts are integral to addressing the current and future challenges posed by a changing climate.

Cities are increasingly vulnerable to the following impacts of climate change:

- rising temperatures
- wildfire and smoke
- extreme weather events
- sea-level rise
- changing precipitation patterns

Practicing climate resilience and adaptation is crucial for safeguarding the well-being of urban populations and ensuring the functionality of critical infrastructure. By preparing for and adapting to climate change, Irvine will reduce the risk of damage to buildings and infrastructure, enhance public health and safety, protect natural ecosystems, and maintain social and economic stability. Proactive measures like incorporating climate considerations into urban planning and design, protecting critical infrastructure from extreme weather events, investing in green infrastructure (i.e., parks and urban forests), and engaging and educating residents on climate change, will contribute to reducing long-term costs associated with responding to climate-related disasters and emergencies.

OPEN SPACE PRESERVATION AND BIODIVERSITY

Turtle Rock Nature Center

Open space preservation and biodiversity conservation play integral roles in environmental protection and climate action. Preserving open spaces, such as parks, natural habitats, and green belts, contributes to carbon sequestration, enhances ecosystem services, and mitigates the urban heat island effect. Open spaces act as carbon sinks, helping to offset greenhouse gas emissions, and providing recreational areas for residents. Additionally, green spaces improve air and water quality, reduce temperatures, and contribute to the overall quality of life for city dwellers. Biodiversity, the variety of plant and animal life within these spaces, is a key component of resilient ecosystems. Biodiversity enhances the resilience of urban ecosystems, making them more adaptable to environmental changes. The presence of diverse plant and animal species ensures the health of ecosystems, promoting resilience against climate-related stressors such as extreme weather events. Rich biodiversity supports ecological balance, pollination of plants, natural pest control, and overall ecosystem health.

Irvine is contributing to climate resilience and the well-being of both the environment and their residents by incorporating open space preservation and biodiversity conservation into the objectives, policies, and programs outlined in the City's Conservation and Open Space Element.

SUSTAINABLE LAND USE PRACTICES

Sustainable land practices are crucial for environmental protection and climate action, as they directly influence ecosystem health, biodiversity, and carbon sequestration. Urbanization and conventional land use practices often contribute to deforestation, soil degradation, and loss of natural habitats. These activities release stored carbon into the atmosphere and disrupt the balance of ecosystems. Sustainable land practices employed by Irvine aim to mitigate these negative impacts by promoting responsible land management, preserving natural spaces, and adopting methods that support both environmental health and human well-being. Specific examples of sustainable land use practices can be seen in the

incorporation of proximity villages, as discussed in the Land Use Element, and the development of the Great Park, as discussed in the Conservation and Open Space Element.

In alignment with the City's Land Use Element, the City will promote sustainable land use practices by incorporating mixed-use zoning and promoting compact, transit-oriented development, reducing the ecological footprint of urban sprawl. The City will also look at transforming previously developed but underused areas into vibrant, sustainable spaces, educating residents about the benefits of sustainable land practices, and incorporating nature-based solutions into urban design to create a more resilient and environmentally friendly City.

Great Park Trails

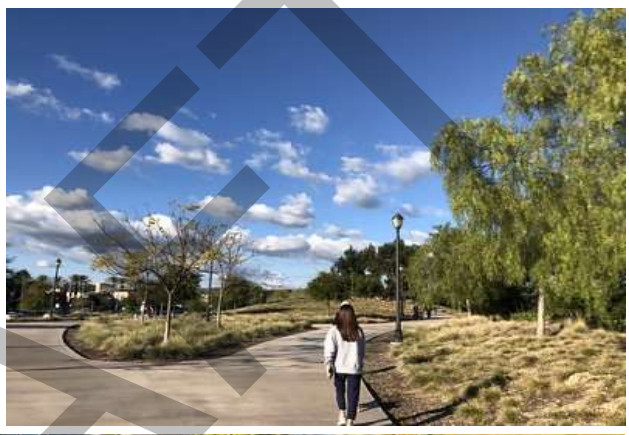
SUSTAINABLE TRANSPORTATION

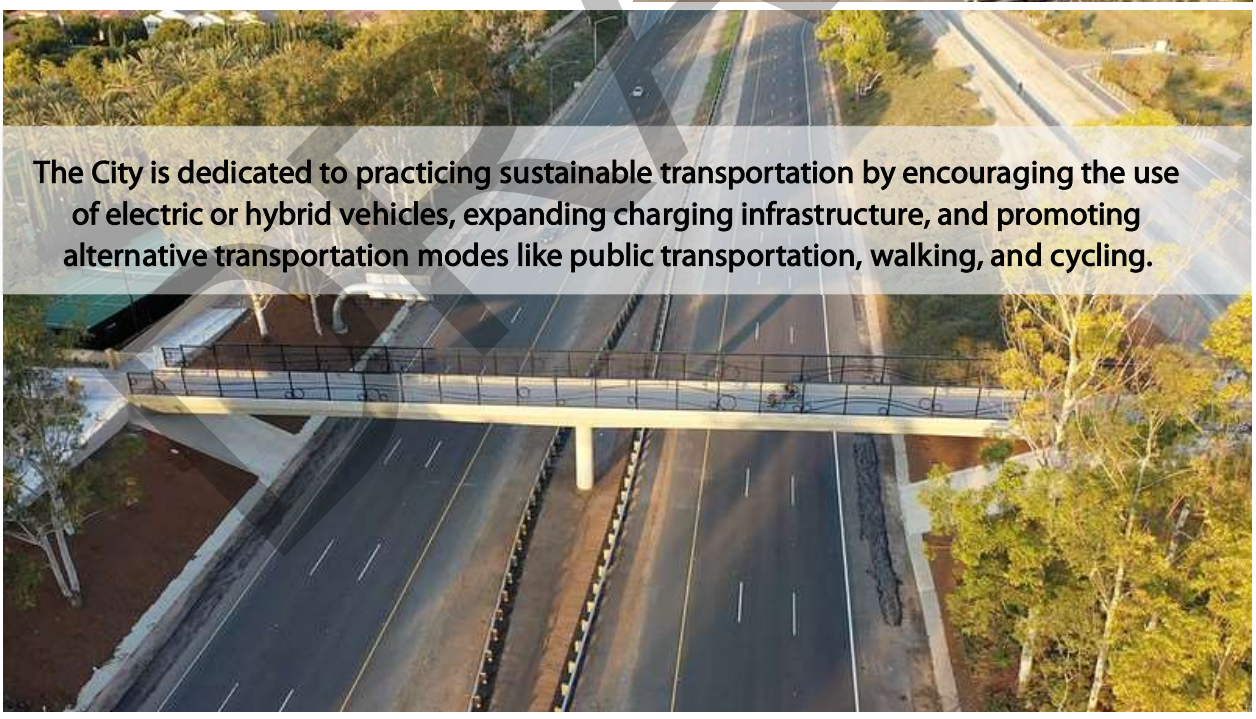
Sustainable transportation plays a pivotal role in environmental protection and climate action, as the traditional reliance on fossil fuel-powered vehicles contributes significantly to air pollution and greenhouse gas emissions. The transportation sector is a major contributor to climate change, and addressing its environmental impact is crucial for building resilient and eco-friendly cities. Sustainable transportation involves adopting cleaner, energy-efficient alternatives and redesigning urban mobility to reduce carbon emissions, improve air quality, and create more sustainable urban landscapes. Irvine is helping to lead the way in creating an environmentally conscious and climate resilient City through prioritizing sustainable transportation.

Some examples of the multiple modes of transportation offered in the City include:

- Bus
- Light rail
- Train
- Biking paths
- Walking trails

Alignment with the City's Circulation Element and the objectives, policies, and programs outlined in the document will enhance urban mobility, reduce traffic congestion, and foster community well-being.





The City is dedicated to practicing sustainable transportation by encouraging the use of electric or hybrid vehicles, expanding charging infrastructure, and promoting alternative transportation modes like public transportation, walking, and cycling.

GOALS, OBJECTIVES, POLICIES, AND IMPLEMENTATION MEASURES

Recognizing the critical role sustainable practices and climate resilience play in the City's future, Irvine has crafted a strategic set of guidelines that aim to harmonize development goals with environmental conservation.

- What are the specific environmental challenges and climate risks faced by our City?
- How can we enhance resilience to climate change impacts such as extreme weather events, sea-level rise, and heatwaves?
- How can we promote sustainable land use and urban planning to minimize environmental degradation and support biodiversity?
- How can we engage and collaborate with stakeholders, including residents, businesses, and community organizations, to implement effective environmental protection and climate action initiatives?
- What waste management strategies will minimize environmental impact, promote resource conservation, and ensure long-term sustainability for our City?
- How can we prioritize energy efficiency measures that deliver the greatest impact in reducing energy consumption, lowering utility costs, and mitigating greenhouse gas emissions while considering the unique needs and characteristics of our City?

The goals, objectives, policies, and implementation measures that follow serve as a roadmap, fostering a community-wide commitment to responsible resource management, mitigation of climate impact, and the creation of an environmentally conscious urban fabric. Through this proactive approach, Irvine aspires to forge a resilient, sustainable, and ecologically vibrant future for the City.

Goal 1: Equitable environmental protection and climate action for all communities in Irvine.

Objective EPCA-1: Ensure equitable environmental protection and climate action for all communities in Irvine by addressing disparities and promoting inclusivity in sustainability initiatives, policymaking, and resource allocation.

Policies:

Policy (a): Ensure equitable access to resources, funding, and opportunities for all communities to participate in and benefit from environmental protection and climate action efforts.

Policy (b): Actively involve diverse stakeholders, including residents from various socioeconomic backgrounds, ethnicities, and geographic areas, in the development, implementation, and evaluation of environmental and climate policies and programs.

Policy (c): Develop and implement climate adaptation strategies that prioritize the needs of Irvine communities, including vulnerable communities, and measures to enhance resilience to extreme weather events, sea-level rise, and other climate-related impacts.

IMPLEMENTATION MEASURES:

- Conduct assessments to identify vulnerable communities and assess their specific needs and challenges related to environmental protection and climate resilience.
- Develop targeted programs and initiatives aimed at addressing the environmental concerns and priorities of all Irvine communities. Allocate resources and funding to support community-led projects that enhance environmental equality and resilience, ensuring equitable allocation of resources for all communities in Irvine.

- Provide training and capacity-building opportunities for residents, including those in vulnerable communities, to actively participate in environmental decision-making processes. Offer technical assistance and resources to community organizations and leaders to effectively advocate for environmental justice in their neighborhoods.

Goal 2: Ensure the application of policies and implementation measures that support environmental justice for communities that meet the requirements of a disadvantaged community.

Objective EPCA-2: Implement policies that prioritize the identification, assessment, and mitigation of environmental health risks in disadvantaged communities.

Policies:

Policy (a): In alignment with Land Use Element objectives and policies, ensure new development with non-residential uses does not result in pollution at levels harmful to the health of humans and aligns

with current uses that are necessary (i.e., research & development, medical, commercial retail such as dry cleaning).

Policy (b): In alignment with Circulation Element objectives and policies, guarantee adherence to Americans with Disabilities Act (ADA) standards for accessibility in all newly constructed sidewalks, transit stops, and bike lanes. Solicit input from disability community stakeholder groups to ensure inclusivity and address specific needs effectively.

Policy (c): Continue managing and supporting programs aimed at offering funding opportunities for essential repairs to single-family homes or mobile residences, as well as enhancements to combat extreme heat and air pollution.

Policy (d): Perform an annual assessment of the execution of the objectives, policies, and implementation measures outlined in this element to monitor advancements, sharing progress assessment with disadvantaged and/or environmental justice communities, inviting residents and businesses from these communities to participate in progress discussions and offer their insights and recommendations.

Policy (e): In alignment with the Conservation and Open Space Element objectives and policies, promote the availability of locally sourced produce and reduce obstacles to establishing urban agriculture initiatives through the development of community gardens, including establishment within proximity to any existing disadvantaged or environmental justice communities, and supporting the establishment of additional farmers markets throughout the City.

Policy (f): In alignment with the Noise Element objectives and policies, guarantee the equitable distribution of noise-reducing infrastructure across all neighborhoods, including those facing disparities in noise exposure, and enforce existing noise ordinances and regulations effectively, implementing measures to address non-compliance and mitigate sources of excessive noise, including areas disproportionately affected by noise pollution.

Policy (g): In alignment with state law and the Housing Element objectives and policies, guarantee resources and mitigation measures are in place to address risk of displacement and housing mobility disparities that may be prevalent in those communities who are disadvantaged.

Policy (h): In alignment with the Safety Element objectives and policies, ensure equitable access to emergency response services, including police, fire, medical, and disaster response resources, across all neighborhoods, with a focus on addressing disparities in service coverage and response times in any communities that may be disadvantaged.

IMPLEMENTATION MEASURES:

- Require developers submitting projects subject to the discretionary review process to analyze potential pollution risks and mitigation strategies.
- Provide incentives for developers to incorporate green building practices and pollution reduction technologies into their projects.

- Establish a review process for sidewalk, transit stop, and bike lane construction projects to verify compliance with ADA standards.
- Collaborate with disability community stakeholder groups to gather feedback on accessibility needs and preferences.
- Offer technical assistance and guidance to homeowners applying for funding to ensure they understand eligibility requirements and application procedures.
- Partner with local contractors and service providers to facilitate repair and enhancement projects efficiently and effectively.
- Establish a dedicated task force or committee responsible for conducting annual assessments of the implementation measures progress.
- Host public meetings and workshops inviting residents and businesses from disadvantaged communities to participate in discussions and provide feedback on the progress assessment.
- Identify suitable locations for community gardens within or near existing disadvantaged or environmental justice communities.
- Provide resources and support to community organizations or non-profits interested in establishing and maintaining community gardens.
- Collaborate with local farmers and vendors to expand access to locally sourced produce through the establishment of additional farmers markets in underserved areas.

The Portola and Great Park communities are identified as disadvantaged communities due solely to their location in proximity to the former MCAS El Toro airbase. The aforementioned goal, objective, policies, and implementation measures aim to establish a robust framework to ensure that should the City identify disadvantaged communities in the future, they will be equipped with equitable treatment and accessibility to environmentally beneficial policies. This proactive approach seeks to mitigate any potential shortfalls experienced by those communities, fostering a commitment to inclusivity and environmental justice for all residents.

Goal 3: Reduce greenhouse gas emissions and mitigate climate change impacts in Irvine to create a more sustainable and resilient community.

Objective EPCA-3 : Achieve significant reductions in greenhouse gas emissions across all sectors within Irvine by implementing targeted policies and initiatives.

Policies:

Policy (a): Promote the transition to renewable energy sources, such as solar, wind, and geothermal, for electricity generation within Irvine.

Policy (b): Encourage the adoption of energy-efficient technologies and practices in buildings, transportation, and industries to reduce reliance on fossil fuels.

Policy (c): Prioritize investments in public transit infrastructure, walking and biking paths, and electric vehicle charging stations to reduce emissions from transportation.

Policy (d): Promote energy conservation measures, such as retrofitting buildings with energy-efficient appliances, insulation, and lighting systems.

IMPLEMENTATION MEASURES:

- Implement policies to incentivize the use of low-emission and alternative transportation modes.
- Establish energy efficiency standards and requirements for new construction and existing buildings to reduce energy consumption and emissions.
- Identify key sources of emissions and set baseline targets for reduction.
- Develop and implement policies that identifies strategies and actions to achieve greenhouse gas reduction targets in Irvine.
- Partner with local utilities, businesses, and community organizations to increase the adoption of renewable energy sources, such as community solar programs and renewable energy incentives, and streamline permitting processes for renewable energy projects to expedite their development and deployment.
- Through the One Irvine Green Home Grants Program, and as funding remains available, continue providing owners of single-family homes and condominiums constructed in or prior to 1975 rebates for sustainability enhancements.
- Allocate funding for the expansion of public transit services, including bus routes, light rail, and commuter trains, to reduce reliance on single-occupancy vehicles.

Goal 4: Improve air quality and protect public health in Irvine by reducing air pollution and minimizing harmful emissions from various sources.

Objective EPCA-4: Achieve and maintain compliance with air quality standards set by regulatory agencies, such as the Environmental Protection Agency (EPA) and the California Air Resources Board (CARB), to ensure a healthy and sustainable environment for residents.

Policies:

Policy (a): Support the adoption of low-emission and alternative fuel vehicles through incentives, rebates, and infrastructure development.

Policy (b): Encourage industries and commercial establishments to implement emission control technologies and practices to minimize air pollution from manufacturing processes, construction activities, and other operations.

Rooftop Solar Energy System installation.

Policy (c): Encourage the use of clean and renewable energy sources, such as solar, wind, and geothermal, to reduce emissions from energy generation and promote a transition away from fossil fuels.

IMPLEMENTATION MEASURES:

- Implement measures to reduce emissions from vehicles, including promoting the use of electric vehicles (EVs), enhancing public transportation infrastructure, encouraging active transportation modes such as walking, and enforcing air quality regulations and permit requirements for businesses to ensure compliance with emission limits and standards.

- Provide incentives and support for the installation of renewable energy systems and energy efficiency upgrades in residential, commercial, industrial, and municipal buildings.
- Regularly monitor and report on key air quality indicators, such as particulate matter (PM), nitrogen oxides (NOx), volatile organic compounds (VOCs), and ozone levels.
- Strengthen enforcement of air quality regulations and permit conditions for industrial facilities, construction sites, and other sources of air pollution.
- Provide financial incentives, grants, and rebates for the adoption of clean energy technologies and energy efficiency measures in residential, commercial, industrial, and municipal buildings.
- Partner with utilities, businesses, and community organizations to promote clean energy programs, such as rooftop solar installations, energy storage systems, and electric vehicle charging infrastructure.
- Raise awareness about the importance of air quality and its impact on public health through educational campaigns, workshops, and community events.

Goal 5: Protect and enhance water quality in Irvine through policy implementation and measures to prevent pollution, conserve water resources, and ensure access to safe and clean water.

Objective EPCA-5: Achieve and maintain compliance with water quality standards set by regulatory agencies, such as the Environmental Protection Agency (EPA) and the California State Water Resources Control Board (SWRCB), to safeguard public health and the environment.

San Canyon Reservoir. Source: Irvine Ranch Water District

Policies:

Policy (a): Implement measures to prevent and control pollution from various sources, including industrial discharges, stormwater runoff, agricultural activities, and wastewater treatment plants.

Policy (b): Protect and restore natural waterways, wetlands, and riparian habitats to improve water quality, enhance biodiversity, and mitigate the impacts of urbanization and land development.

Policy (c): Implement green infrastructure projects, such as rain gardens, bioswales, and permeable pavement, to manage stormwater runoff and reduce nonpoint source pollution.

Policy (d): Promote water conservation practices and sustainable water use behaviors among residents, businesses, and municipal operations to reduce water consumption and minimize strain on water resources.

Policy (e): Implement water-efficient landscaping standards, irrigation technology upgrades, and leak detection programs to optimize water use and reduce wastage.

IMPLEMENTATION MEASURES:

- Implement best management practices (BMPs) for stormwater management, including the installation of vegetated swales, detention basins, and infiltration systems to capture and treat runoff before it enters water bodies.
- Encourage the use of water quality wetlands, biofiltration swales, watershed scale retrofits, etc., where such measures are likely to be effective and technically and economically feasible.
- Provide appropriate permanent measures to reduce stormwater pollutant loads from development sites.
- Collaborate with neighboring jurisdictions, water agencies, and stakeholders to address cross-boundary water quality issues and coordinate efforts to protect shared water resources.

Goal 6: Reduce energy consumption and promote energy efficiency in Irvine.

Objective EPCA-6 : Achieve significant reductions in per capita energy consumption across residential, commercial, and municipal sectors while promoting the adoption of renewable energy sources and energy-efficient technologies.

Policies:

Policy (a): Through the efforts of CalGreen (California Green Building Standards Code), establish and enforce energy efficiency standards and building codes for new construction and major renovations to improve the energy performance of buildings and reduce energy demand.

Policy (b): Require energy-efficient building design, insulation, HVAC systems, lighting, and appliances to minimize energy consumption and lower utility costs for residents and businesses.

Policy (c): Promote the adoption of renewable energy systems, such as solar photovoltaic (PV) panels, wind turbines, and geothermal heat pumps, to generate clean and sustainable electricity for onsite consumption or grid injection.

Policy (d): Streamline permitting processes and provide incentives, rebates, and financing options to encourage residents, businesses, and municipal facilities to invest in renewable energy installations.

Policy (e): Implement energy conservation programs and public awareness campaigns to educate residents and businesses about the importance of energy conservation, energy-saving practices, and behavioral changes to reduce energy waste.

Policy (f): Monitor federal, state, regional, and other local governments, utility companies, Irvine Ranch Water District (IRWD), and other private and public agencies energy programs. Obtain information and technical assistance for energy programs and implement federal and state energy programs.

Policy (g): Promote energy savings in buildings constructed before 1978.

Policy (h): Encourage voluntary retrofit energy programs for residential, commercial, and industrial buildings including energy conservation measures.

Policy (i): Maximize energy efficiency of the City's facilities and operations by use of recycled materials, renewable sources, and conservation measures.

IMPLEMENTATION MEASURES:

- Track energy usage data for various sectors to monitor energy performance to better identify opportunities for improvement and measure progress toward energy reduction goals.
- Identify energy efficiency upgrades and retrofits for potential implementation across various sectors to help reduce energy consumption, lower operational costs, and demonstrate leadership in sustainability.
- Invest in energy-efficient lighting, HVAC systems, building automation, and energy management technologies to optimize energy use and enhance the performance of municipal infrastructure.
- Collaborate with local energy providers, developers, and community organizations to identify suitable sites for renewable energy projects, secure funding, and incentives, and engage stakeholders in project planning and implementation.
- Consider establishing a City energy service/coordinator with adequate support to promote, implement, and administer the Energy implementation measures.

Goal 7: Minimize waste generation, promote sustainable waste management practices, and maximize resource recovery in Irvine.

Objective EPCA-7 : Achieve significant reductions in per capita waste generation and increase diversion rates through comprehensive waste reduction, reuse, recycling, and composting initiatives, while minimizing land fill disposal and associated greenhouse gas emissions.

Policies:

Policy (a): Encourage businesses, manufacturers, and retailers to adopt eco-friendly practices, such as product redesign, packaging reduction, and extended producer responsibility (EPR) programs to minimize waste generation and environmental impact.

Policy (b): Collaborate with waste management providers, recyclers, and composting facilities to improve collection, sorting, and processing capabilities, enhance material recovery rates, and promote closed-loop recycling and circular economy principles.

Policy (c): Provide education, outreach, and incentives to encourage participation in waste diversion programs, increase public awareness about recycling and composting best practices, and promote behavior change among residents, businesses, and community organizations.

Policy (d): Cooperate in guiding the development and improvement of a solid waste disposal system within the County of Orange that will meet the needs of the City and protect the City from damage by unplanned disposal of refuse.

Policy (e): Control the siting of solid waste disposal facilities to minimize impact on adjacent or existing planned land uses.

IMPLEMENTATION MEASURES:

- Set waste reduction goals, diversion targets, and performance metrics to track progress, measure success, and evaluate the effectiveness of waste management initiatives and programs.
- Collaborate with private sector partners, waste management companies, and investors to finance, develop, and operate recycling and composting facilities, and explore public-private partnerships (PPPs) to leverage resources and expertise.
- Provide multilingual educational materials, online resources, and interactive tools to empower individuals and organizations to make informed decisions, adopt sustainable behaviors, and participate actively in waste reduction and diversion efforts.
- Use the General Plan land use categories and building intensity standards as a basis for estimating waste disposal requirements and program needs.
- Encourage the continued study of alternative waste disposal methods and technology with emphasis on the reuse of solid waste materials and waste-to-energy.
- Develop all waste disposal programs in cooperation with landowners, the county, and other jurisdictional and regulatory agencies.
- Work closely with the operator(s) of existing landfill sites to minimize deleterious effects on surrounding land uses including possible impacts generated by rodent and insect populations, odors, and groundwater conditions.
- Explore the possibility of a system of solid waste management and collection that will facilitate recycling waste products and the possible generation of fuel at either a Citywide, planning area, or residential unit scale.
- Require, to the extent necessary to comply with state law, during discretionary application review, solid waste reduction and recycling efforts for residential, commercial, industrial, institutional, and recreational land uses to reduce the amount of waste disposed at landfills.
- Coordinate with the operators of landfills on the best available technology as part of their landfill operations and operate in such a manner as to minimize adverse environmental impacts.
- Encourage the use of recycled water sources for secondary water uses, such as fire hydrants, on-site fire sprinkler systems, wastewater systems, and irrigation purposes to the greatest extent feasible.

Goal 8: Mitigate the impacts of climate change, enhance resilience, and transition to a climate-resilient community in Irvine.

Objective EPCA-8: Reduce greenhouse gas emissions, adapt to the effects of climate change, and promote climate resilience through comprehensive policies, programs, and initiatives that engage stakeholders, foster innovation, and prioritize equitable and sustainable solutions.

One Irvine Event - North El Camino Real

Policies:

Policy (a): Implement strategies to achieve significant reductions in greenhouse gas emissions across all sectors, including energy, transportation, buildings, waste, and land use, in alignment with state and regional climate goals.

Policy (b): Encourage the adoption of renewable energy targets, energy efficiency standards, and building codes to promote clean energy adoption, reduce energy consumption, and decarbonize the built environment, while incentivizing the use of renewable technologies and sustainable practices.

Policy (c): Coordinate climate adaptation and resilience efforts in alignment with federal, state, and local policies and measures to address the impacts of climate change, including sea-level rise, extreme weather events, heatwaves, droughts, and wildfires, on critical infrastructure, natural resources, and vulnerable communities.

Policy (d): Incorporate climate risk assessments, vulnerability studies, and hazard mapping into land use planning, infrastructure development, and emergency preparedness efforts in alignment with the Safety Element, to enhance resilience, protect assets, and minimize socio-economic disruptions.

Policy (e): Foster community engagement, collaboration, and partnership-building to ensure that climate action initiatives are inclusive, equitable, and responsive to the needs and priorities of diverse stakeholders, including frontline communities, disadvantaged populations, and marginalized groups.

IMPLEMENTATION MEASURES:

- Support research, development, and innovation in climate-resilient technologies, adaptation strategies, and sustainable practices through public-private partnerships, academic collaborations, and grant programs to accelerate the transition to a climate-resilient economy and society.
- Increase public awareness, education, and outreach on climate change science, impacts, and solutions through community workshops, educational programs, and communication campaigns targeting residents, businesses, schools, and local organizations.

Goal 9: Preserve and enhance open spaces, natural habitats, and biodiversity in Irvine.

Objective ECPA-9: Conserve and restore natural ecosystems, protect biodiversity, and expand access to green spaces through comprehensive policies, programs, and initiatives that prioritize ecological integrity, community engagement, and sustainable land management practices.

Policies:

Policy (a): Align efforts to preserve open space and biodiversity with goals, objectives, policies, and measures in the Conservation and Open Space Element.

Policy (b): Identify, designate, and protect critical open space areas, including parks, natural reserves, wildlife corridors, and greenways, to maintain biodiversity, protect natural resources, and enhance the quality of life for residents.

Policy (c): Establish regulations, ordinances, and land use policies to safeguard open spaces from development pressures, habitat fragmentation, and encroachment, while promoting compatible land uses and sustainable stewardship practices.

Policy (d): Implement measures to conserve and restore native flora and fauna, including endangered species, migratory birds, and sensitive habitats, through habitat restoration, species recovery programs, and invasive species management efforts.

Policy (e): Foster partnerships with environmental organizations, conservation groups, and academic institutions to conduct biodiversity assessments, monitor ecosystem health, and implement conservation initiatives that prioritize habitat connectivity, genetic diversity, and ecological resilience.

Policy (f): Develop and maintain a network of green infrastructure, including urban forests, green streets, wetlands, and riparian buffers, to enhance ecosystem services, mitigate climate impacts, and promote natural resilience to extreme weather events.

Policy (g): Promote the integration of green infrastructure elements into urban planning, infrastructure design, and land development projects to improve air and water quality, reduce urban heat island effects, and enhance overall environmental sustainability.

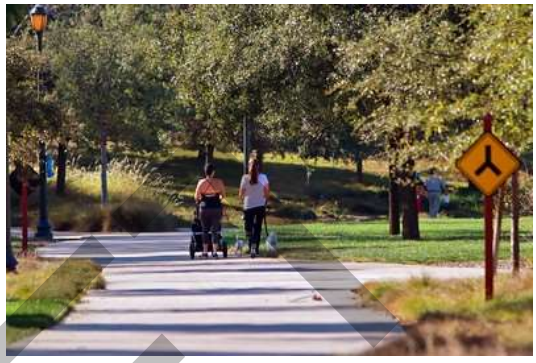
IMPLEMENTATION MEASURES:

- Comply with existing natural communities and conservation plans (NCCPs) and habitat conservation plans (HCPs) and natural resource management strategies to identify priority conservation areas, set conservation goals, and implement habitat enhancement projects that benefit native wildlife and plant species.
- Invest in green infrastructure projects, such as green roofs, rain gardens, and urban forests, to enhance urban biodiversity, mitigate stormwater runoff, and create resilient landscapes that provide multiple ecological, social, and economic benefits.
- Engage residents, schools, businesses, and community groups in volunteer stewardship activities, citizen science projects, and environmental education initiatives to raise awareness about the value of open spaces, biodiversity conservation, and sustainable land management practices.

Goal 10: Promote sustainable land use practices in Irvine.

Objective EPCA-10: Implement policies and initiatives that prioritize sustainable land management, smart growth principles, and equitable development strategies to ensure the efficient use of land while protecting environmental quality and promoting community well-being.

Policies:



Policy (a): Encourage mixed-use development patterns that minimize urban sprawl, reduce vehicle miles traveled, and support walkable neighborhoods, transit-oriented developments, and vibrant urban centers.

Policy (b): Establish zoning regulations, design standards, and development incentives to promote infill development, higher residential densities, and diverse land uses that enhance accessibility, connectivity, and livability for residents of all ages, incomes, and abilities.

Policy (c): Integrate green infrastructure elements, such as parks, greenways, and open spaces, into land use planning and development projects to manage stormwater runoff, improve air and water quality, and enhance ecological connectivity and biodiversity.

Policy (d): Protect and conserve natural resources, including wetlands, riparian areas, and wildlife habitats, through land preservation, conservation easements, and habitat restoration initiatives that balance ecological preservation with compatible land uses and community needs.

Policy (e): Incorporate climate-responsive design principles and resilient landscape strategies into land use planning, site design, and infrastructure development to mitigate climate risks, such as flooding, heat islands, and sea-level rise, and enhance community resilience to climate-related hazards.

Policy (f): Encourage and incentivize the adoption of Leadership in Energy and Environmental Design (LEED) building standards for new construction and major renovations within the City.

Policy (g): Explore the adoption of green building standards, energy-efficient design guidelines, and sustainable construction practices to reduce greenhouse gas emissions, promote energy conservation, and minimize environmental impacts associated with new development and redevelopment projects.

IMPLEMENTATION MEASURES:

- Revise zoning codes, land use ordinances, and comprehensive plans to align with sustainable land use principles, smart growth strategies, and climate adaptation goals, including provisions for mixed-use zoning, density bonuses, and green development incentives.

- Invest in public transportation infrastructure, pedestrian and bicycle facilities, and transit-oriented development (TOD) projects to reduce reliance on single-occupancy vehicles, improve mobility options, and enhance access to jobs, services, and amenities for residents.
- Partner with transportation agencies, developers, and community stakeholders to design and implement complete streets, greenways, and multi-modal transportation networks that prioritize pedestrian safety, bicycle connectivity, and transit accessibility in alignment with land use planning objectives.
- Foster collaboration and partnerships with local governments, community organizations, and private sector stakeholders to promote sustainable land use practices, community-driven planning processes, and equitable development outcomes that address the needs and priorities of diverse populations.

Ventana Spur Bridge

Goal 11: Foster a sustainable transportation system in Irvine that promotes air quality and enhances community resilience to climate change impacts.

Objective EPCA-11: Implement policies and initiatives that promote active transportation, public transit, and low-emission vehicles to reduce reliance on single-occupancy vehicles, minimize traffic congestion, and enhance mobility options for residents of all ages and abilities.

Policies:

Policy (a): Develop and maintain a comprehensive network of pedestrian-friendly sidewalks, bicycle lanes, and multi-use trails that connect residential neighborhoods, commercial districts, employment centers, and public amenities.

Policy (b): Implement complete streets policies and design standards that prioritize safe and accessible walking, biking, and rolling infrastructure, including ADA-compliant facilities, pedestrian crossings, and bicycle parking facilities, in all transportation projects and street improvements.

Policy (c): Encourage transit-oriented development (TOD) and mixed-use zoning around transit stations and major transit corridors to promote compact, walkable neighborhoods, reduce automobile dependency, and support sustainable land use patterns that integrate housing, jobs, and amenities.

EV chargers at the Great Park

Policy (d): Expand the availability of EV charging stations, particularly in public parking facilities, multi-family residential complexes, commercial areas, and workplaces, to facilitate EV adoption and reduce range anxiety for drivers of electric vehicles.

IMPLEMENTATION MEASURES:

- Collaborate with regional transit agencies, transportation authorities, and private sector partners to expand transit service coverage, frequency, and reliability, particularly in underserved neighborhoods, employment centers, and transit-dependent communities.
- Invest in transit enhancements, such as bus shelters, real-time arrival information, and fare integration programs, to improve the quality, convenience, and accessibility of public transit services for riders of all ages, incomes, and abilities.
- Promote Low-Emission and Electric Vehicles: Establish EV-friendly policies and regulations, such as streamlined permitting processes, dedicated parking spaces, and EV-ready building codes, to facilitate the installation of EV charging infrastructure in new developments and existing buildings.