Western Riverside Council of Governments
Western Riverside County Climate Action Plan
Existing Conditions Memorandum

This memorandum assesses existing activities within Western Riverside Council of Governments (WRCOG) jurisdictions that affect greenhouse gas (GHG) emissions and summarizes similar activities occurring at the state, regional, and subregional level.

# Introduction

WRCOG staff performed a desktop review of existing plans, policies, and programs across the energy, waste, water, transportation, land use, and green infrastructure sectors using a checklist prepared by AECOM. Assessing existing policies in this way allows for a cross-check of strategies already employed within the WRCOG subregion, and will assist in determining those programs or policies most needed in the subregion as a whole, to be implemented by participating cities or the County within the Climate Action Plan (CAP).

Several jurisdictions in the subregion have already adopted a CAP, or are developing a CAP independently from this project[1]. These CAPs describe existing emissions-reducing policies and programs in each city. This memorandum summarizes these policies by sector and jurisdiction. These CAP policies are perhaps the best indicator of future programs that could be feasible elsewhere within the subregion, as a jurisdiction has already found the program to be feasible.

In addition, WRCOG is coordinating a separate work effort, the Western Riverside Energy Leader Partnership (WRELP), to analyze energy-sector emissions and propose energy conservation and renewable energy measures to reduce GHG emissions within Energy Action Plans (EAPs) for 11 WRCOG jurisdictions served by Southern California Edison (SCE)[2]. This memorandum briefly summarizes existing energy-sector programs in these jurisdictions based on surveys completed to support the EAPs. This information will be supplemented by additional analysis documented in the completed EAPs.

Remaining information on existing policies and programs by sector was collected in "one-on-one" meetings facilitated by WRCOG staff with representatives from each city in May 2012. A checklist was used to identify a range of common emission reduction measures employed by California local governments from a variety of reputable sources (e.g., California Air Pollution Control Officers

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[1] As of the date of this memorandum, Lake Elsinore, Murrieta, and Corona have adopted CAPs. The County of Riverside has completed their CAP and is awaiting final approval in September 2013. Moreno Valley and Menifee are currently preparing local CAPs independent of this WRCOG work effort.

[2] WRELP partners include Calimesa, Canyon Lake, Hemet, Lake Elsinore, Menifee, Murrieta, Norco, Perris, Temecula, San Jacinto, and Wildomar. Atkins is preparing EAPs for these jurisdictions under a separate contract, which will have additional information on local policies and programs. Municipal policy and program information from each jurisdiction's EAP is used to supplement the policy and program discussions where appropriate.

Association [CAPCOA], Governor's Office of Planning and Research [OPR], and California Attorney General's office). Copies of the checklist prepared for each jurisdiction are available upon request. Local agency staff identified existing policies or programs in their community, and offered perspective on policies or programs the jurisdiction may consider in the future. These future programs will be documented in future CAP work products presenting draft GHG reduction measures.

A number of current programs are administered by WRCOG and other organizations at the subregional level. For example, the WRCOG HERO (Home Energy Renovation Opportunity Program provides low interest rate financing for permanently affixed energy efficiency, water efficiency, and renewable energy products. HERO Financing is repaid through an assessment on property tax bills over 5, 10, 15, and 20 year terms, based on the useful life of the products, and upon sale of the property, the balance generally stays with the property. Similarly, interregional Partnerships (IRPs) in corridor planning, the Transportation Uniform Mitigation Fee (TUMF) and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) provide subregional transportation and green infrastructure benefits to local agencies[3].

# Energy

Electricity and natural gas used for appliances, lighting, heating and cooling, cooking, and other activities within residential, commercial, and industrial uses typically account for between 40% and 70% of a California jurisdiction's GHG emissions. Energy emissions are considered demand-side emissions, meaning that they are attributable to the jurisdiction where consumption takes place, rather than to the jurisdiction where production takes place. The following discussions identify existing local energy efficiency, renewable energy generation, street and area lighting, and water and wastewater treatment efficiency policies and programs in the subregion.

## Energy Efficiency

Energy efficiency policies and programs describe different methods to cost-effectively reduce energy in residential and commercial uses.

### *Policy and Program Discussion*

Promoting energy efficiency in new construction and existing buildings reduces total energy use, lowers utility bills, and reduces GHG emissions. Energy efficiency policies and programs finance, assist, enforce, and provide incentives to create and upgrade homes and commercial uses with modern and efficient energy systems. At the state level, Title 24 building standards and the California Green Building Standards Code (CalGreen) provide basic energy efficiency code requirements for new construction, as well as advanced tier (e.g., Tier 1, Tier 2) code options that local governments can choose to implement

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[3] The MHSCP was administered by the Western Regional Conservation Authority (WCA) as an element of the Riverside County Integrate Project (RCIP) in 2003 to conserve open space, nature preserves and wildlife.

across-the-board, or for certain project types. The Lighting Efficiency and Toxics Reduction Act of 2008 (AB 1109) requires reductions in lighting energy use, encourages use of new lighting technologies to save energy, reduces hazardous waste, and increases recycling

Several local energy efficiency programs exist based in part on Federal and State energy efficiency programs, including the Federal Housing Association Section 203B energy efficient mortgage program, technical assistance programs for renewable energy and model building codes offered by the U.S. Department of Energy and the Environmental Protection Agency, and low-income energy assistance programs offered by the U.S. Department of Health and Social Services. Additionally, the Commercial Building Energy Disclosure Program AB 1103 of 2007 requiring energy benchmarking data to be released during sales.

Existing energy efficiency programs in the subregion are managed by WRCOG, SCE, Riverside Public Utilities (RPU), Banning Electric Utility (BEU), individual cities, and the County of Riverside.

- ❖ **Financing** options include on-bill financing, offering interest free funding to retrofit homes and businesses, and the WRCOG HERO Program, which provides Property Assessed Clean Energy (PACE) financing for energy and water efficiency and renewable energy projects for residential and commercial properties throughout the subregion.
- ❖ **Retrofitting** includes upgrading appliances, general home improvements, heating and cooling system upgrades, pool pump replacements, appliance recycling, and improved lighting. Numerous rebates are available to make these upgrades more financially feasible for small businesses and homeowners.
- ❖ **Smart grid** technology, currently offered by SCE and the Southern California Gas Company, is an advanced monitoring system that enables two-way communication between end-users and the utility, ensuring that electricity is being used in the most efficient and affordable way possible. Numerous utilities have rolled out smart meters as a first step to implement a smart grid system.
- ❖ **Shade tree** requirements and incentives can maintain cooler temperatures in existing buildings and new construction to reduce the heat island effect.
- ❖ **Code requirements and outreach** programs for energy efficiency include local energy efficiency codes and green building ordinances to implement CalGreen, as well as programs and partnerships offered by WRCOG and SCE. For example, Moreno Valley and Corona participate in the Community Energy Partnership (CEP) to provide targeted energy education and services to homeowners, renters, senior citizens, small business owners, schools, and municipal employees.

## *Existing Conditions*

Tables E-1 and E-2 list existing energy efficiency policies and programs implemented within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP, for new construction and for existing buildings, respectively. The notes section of the table indicates the source of the policy or program if managed outside the jurisdiction and any additional information found beyond the individual jurisdiction's policy and program checklist. Energy efficiency opportunities are

also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions. Additional efforts to create regional measures that achieve energy-sector GHG reductions will result from the WRELP Program.

## New Construction

| Table E-1 | | |
|---|---|---|
| **Existing WRCOG Energy Efficiency Policies and Programs for New Construction** | | |
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Energy Efficiency in New Construction (Residential)** | | |
| **Streamlined Priority Permitting for Energy Efficient Construction** | Norco | |
| **Technical Assistance Program for Developers** | Banning, Riverside | |
| **Energy Efficient Mortgages** | Banning | FHA Section 203B |
| **Energy Efficiency Rating System for New Residential Units** | Riverside | Provided through CalGreen compliance. Standard Condition of Approval (COA) |
| **Energy Efficiency Performance Feebate Program** | Riverside | AB 1109. All new buildings must be benchmarked under rating system. |
| **Energy Efficiency in New Construction (Non-residential)** | | |
| **Technical Assistance Program for Developers** | Riverside | Department of Energy |
| **Energy Efficiency Performance Feebate Program** | Riverside | |
| **Appliance Upgrade Requirements** | | |
| **High Efficiency Major Appliance (e.g. Refrigerator) Requirements for New Construction** | Riverside | |
| **Smart Grid Integration** | | |
| **Smart Integration Requirement for New Buildings** | Hemet, Perris, San Jacinto, Temecula, Wildomar | |

| Table E-1 | | |
|---|---|---|
| **Existing WRCOG Energy Efficiency Policies and Programs for New Construction** | | |
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Building Shade Trees** | | |
| **Shade Tree Requirements for New Construction** | Calimesa, Eastvale, Perris, Riverside, Temecula | |

## Existing Buildings

| Table E-2 | | |
|---|---|---|
| **Existing WRCOG Energy Efficiency Policies and Programs for Existing Buildings** | | |
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Energy Efficiency Retrofits in Existing Buildings (Residential)** | | |
| **Residential Retrofit Outreach Campaigns** | All WRCOG jurisdictions | WRCOG Hero Program |
| **Energy Efficiency Audit Programs** | All WRCOG jurisdictions | Offered by SCE; Banning and Riverside have individual programs |
| **Residential Retrofit Rebate Programs** | All WRCOG jurisdictions | Offered by SCE; Banning and Riverside have individual programs |
| **Weatherization Assistance Programs (Multi-family, Low-income)** | Banning, Calimesa, Hemet, Perris, Riverside, San Jacinto, Temecula, Wildomar | Department of Health and Human Services Low Income Home Energy Assistance Program (LIHEAP) |
| **Energy Efficient Mortgages (Residential Retrofit)** | Banning | |
| **Property Assessed Clean Energy (PACE) Bond-based Financing program (Efficiency)** | All WRCOG jurisdictions | WRCOG HERO Program |
| **Energy Efficiency Retrofits in Existing Buildings (Commercial)** | | |
| **Non-residential Retrofit Outreach Campaigns** | All WRCOG jurisdictions | WRCOG HERO Program |
| **Energy Efficiency Audit Programs** | All WRCOG jurisdictions | Offered by SCE; Banning and Riverside have individual programs |
| **Non-residential Retrofit Rebate Programs** | All WRCOG jurisdictions | Offered by SCE; Banning and Riverside have individual programs |
| **Direct Install (Small Business) Programs** | All WRCOG jurisdictions | Offered by SCE; Banning and |

| Table E-2 Existing WRCOG Energy Efficiency Policies and Programs for Existing Buildings | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| | | Riverside have individual programs |
| **Energy Efficient Mortgages (Non-residential Retrofit)** | Banning | |
| **On-bill Financing for Non-residential Energy Efficiency** | All WRELP jurisdictions | SCE |
| **Property Assessed Clean Energy (PACE) Bond-based Financing program (Efficiency)** | All WRCOG jurisdictions | WRCOG HERO Program |
| **Energy Efficiency Rating System for New Non-residential Buildings** | Hemet, San Jacinto, Temecula | |
| **Interior Lighting Upgrades** | | |
| **Building Owner/Tenant Lighting Efficiency Outreach Campaign** | Banning, Norco, Perris, Riverside, San Jacinto, Temecula | AB 1109 |
| **Subsidized Bulb (CFL, LED) Distribution** | Banning, Hemet, Perris, Riverside, Wildomar | |
| **Lighting Rebate Programs** | Banning, Hemet, Riverside, Wildomar | |
| **Appliance Upgrades** | | |
| **Appliance Efficiency Outreach Campaign** | Banning, Calimesa, Hemet, Perris, Riverside, Wildomar | |
| **Appliance Rebate Programs** | Banning, Calimesa, Hemet, Perris, Riverside, Temecula, Wildomar | |
| **Smart Grid Integration** | | |
| **Building Owner/Tenant Smart-Grid Outreach Campaign** | Calimesa, Eastvale, Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Building Shade Trees** | | |
| **Building Shade Tree Outreach Campaign** | Banning, Perris, Riverside | |
| **Subsidized Shade Tree Program** | Banning, Riverside | |

## *Existing CAP Measures*

Energy efficiency opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically

and politically feasible. Given that these measures have been previously identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

## Corona
- ❖ R2-E 1: New construction residential energy efficiency requirements
- ❖ R2-E 3: Residential energy efficiency retrofits
- ❖ R2-E 5: New construction commercial energy efficiency requirements
- ❖ R2 E-7: Commercial/industrial energy efficiency and renewable energy retrofits

## Lake Elsinore
- ❖ E-1.1: Tree planting requirements
- ❖ E-1.2: Cool roof requirements
- ❖ E-1.3: Energy efficient building standards.
- ❖ E-2.1: Energy efficiency upgrades and retrofits
- ❖ E-2.2: Green business certification program
- ❖ E-2.3: CFL distribution program

## Murrieta
- ❖ CSV-12: Energy conservation and the generation of energy from renewable sources are prioritized as part of an overall strategy to reduce GHG emissions.
- ❖ CSV-14: A community that encourages and incentivizes the sustainable development of buildings and neighborhoods, particularly with respect to durability, energy and water use, and transportation impacts.

## Moreno Valley
- ❖ R2-E1: New construction residential energy efficiency requirements. Require energy efficient design for all new residential buildings to be 10% beyond the current Title 24 standards. (Reach Code)
- ❖ R2-E5: New construction commercial energy efficiency requirements. Require energy efficient design for all new commercial buildings to be 10% beyond the current Title 24 standards. (Reach Code)
- ❖ R3-E1: Energy efficient development, and renewable energy deployment facilitation and streamlining. Updating of codes and zoning requirements and guidelines to further implement green building practices. This could include incentives for energy efficient projects.

## Riverside County
- ❖ R2-E1: Residential energy efficiency program
- ❖ R2-E3: Residential retrofit implementation program
- ❖ R2-E5: Commercial energy efficiency program
- ❖ R2-E7: Commercial/industrial retrofit program

# Renewable Energy

Renewable energy policies and programs describe different methods to encourage or require generation and use of local-scale renewable energy (e.g., solar, wind, waste-to-energy).

## *Policy and Program Discussion*

At the state level, Executive Order S-21-09 established a statewide renewable energy portfolio target of 33% by year 2020. Therefore, California utilities, including SCE, RPU, and BEU, will increase their renewable portfolio standard (RPS) to at least 33% by year 2020. In addition, the AB 32 Climate Change Scoping Plan (Scoping Plan) has established several statewide measures to reduce electricity and natural gas consumption in residential, commercial, and industrial land uses throughout the state.

Local renewable energy programs encourage greater reliance on renewable energy sources for domestic and business use through financing programs and by increasing accessibility to renewable energy technology.

- ❖ **Building scale renewable** energy programs are similar to programs for energy efficiency. These programs include permitting incentives, rebates, on-bill financing, and the WRCOG HERO Program to offset the costs of installing solar systems, wind systems, and fuel cells in both residential and commercial settings.
    - The $2.8 billion California Solar Initiative program offers cash rebates for installing solar panels on a home or business.
    - Power purchase agreements (PPA's), authorized by the California Public Utilities Commission, allow SCE to purchase power from distributed renewable energy facilities interconnected with its grid.
    - Barrier reductions incentivize renewable energy use and increase accessibility to new technology (e.g., solar districts, bulk purchasing) through code changes and outreach.
- ❖ **Other renewable energy generation** programs include requirements for new buildings in Riverside to incorporate renewable energy technology. Banning, Perris, Riverside, and Temecula all have municipal photovoltaic or solar-thermal facilities, and Riverside creates energy by processing wastewater and food. Riverside also requires certain new construction projects to incorporate renewable energy.

## *Existing Conditions*

Table E-3 lists existing renewable energy policies and programs implemented within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. The notes section of the table indicates the source of the policy or program and any additional information found beyond the individual jurisdiction's policy and program checklist. Renewable energy opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions. Additional efforts to create regional measures that achieve energy-sector GHG reductions will result from the WRELP Program.

| Table E-3 Existing WRCOG Renewable Energy Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Building Scale Renewables** | | |
| **Renewable Energy Outreach Campaigns** | All WRCOG jurisdictions | WRCOG HERO Program |
| **Reduced Permitting Fees for Building Scale Renewable Energy** | Riverside | |
| **Streamlined Priority Permitting for Building-scale Renewable Energy** | Calimesa, Riverside | |
| **Barrier Reduction Program (e.g. Solar Districts, Bulk Purchasing)** | San Jacinto | |
| **Renewable Energy Rebate Programs** | Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Power Purchase Agreement (PPAs) Promotion Program** | Hemet, Perris, San Jacinto | |
| **Property Assessed Clean Energy (PACE) Bond-based Financing Program (Renewables)** | All WRCOG jurisdictions | WRCOG HERO Program |
| **Minimum Renewable Electricity Requirements for New Buildings** | Riverside | |
| **Other Renewable Energy Generation** | | |
| **Municipal Photovoltaic or Solar Thermal Facilities** | Banning, Perris, Riverside, Temecula | |
| **Other Municipal Renewable Energy Facilities** | Riverside | |
| **Food-Waste Biodigester Energy Facility** | Riverside | |
| **Wastewater Treatment Biogas-to-Energy** | Riverside | |

## *Existing CAP Measures*

Renewable energy opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

### Corona
❖ R2-E1: New construction residential energy efficiency requirements

- ❖ R2-E3: Residential energy efficiency retrofits
- ❖ R2-E5: New construction commercial energy efficiency requirements
- ❖ R2-E7: Commercial/industrial energy efficiency and renewable energy retrofits

### Lake Elsinore
- ❖ E-5.1:Renewable energy incentives

### Moreno Valley
- ❖ R2-E2: New construction residential renewable energy. Facilitate the use of renewable energy (such as solar (photovoltaic) panels or small wind turbines) for new residential developments. An alternative approach would be the purchase of renewable energy resources offsite.

### Riverside County
- ❖ R2-E2: Residential renewable energy program
- ❖ R2-E4: Residential renewable retrofit program
- ❖ R2-E6: Commercial/industrial renewable energy program

## Public Realm Lighting

Public realm lighting opportunities include measures to upgrade street lighting, area lighting, traffic lights, and commercial outdoor lights to more efficient technologies, such as light-emitting diode (LED) bulbs.

### *Policy and Program Discussion*

Public realm lighting policies and programs address improvements and upgrades to public lighting and lighting in semi-public areas (e.g., commercial parking lots), as well as financing structures to incentivize these improvements.

- ❖ **Street and area** lighting upgrade programs replace existing street lights with more energy-efficient technologies, including LEDs.
  - ▪ Parking lot lighting upgrades are a part of Energy Upgrade California's Technical Assistance Program. Energy Upgrade California works with local governments to install bi-level lighting fixtures and wireless lighting controls in parking lots.
- ❖ **Traffic light** conversion and synchronization reduce energy use and maintenance costs.
- ❖ **Commercial outdoor** lighting programs include outreach and rebates that incentivize commercial businesses to upgrade outdoor lighting.

### *Existing Conditions*

Table E-4 lists existing public realm lighting policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. The notes section of the table indicates the source of the policy or program and any additional information found beyond the individual jurisdiction's policy and program checklist. Future public realm lighting opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table E-4 Existing WRCOG Public Realm Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Street and Area Lighting** | | |
| **Streetlight Upgrade Program** | Perris, Riverside, San Jacinto, Wildomar | |
| **Public Parking Lot Lighting Upgrade Program** | Riverside, Wildomar | |
| **Traffic Lights** | | |
| **Traffic Light Conversion Program** | Banning, Calimesa, Norco, Perris, Riverside, San Jacinto, Wildomar | |
| **Commercial Outdoor Lighting Requirements** | | |
| **Non-Residential Outdoor Lighting Retrofit Outreach Campaign** | Banning, Riverside | |
| **Outdoor Lighting Retrofit Rebates** | Banning, Riverside | |
| **Traffic Signal Synchronization** | Moreno Valley, Temecula | Moreno Valley Energy Efficiency and Climate Action Strategy (pg 9) Temecula Sustainability Plan (pg 7) |

## *Existing CAP Measures*

Public realm lighting opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

## Corona
 ❖ R2-E 8: Induction streetlight retrofits

## Lake Elsinore
 ❖ E-3.2: Energy efficient street and traffic signal lights
 ❖ E-3.3: Street light automatic daylighting control devices

## Riverside County
 ❖ R2-E 8: Induction streetlight retrofits

# Water and Wastewater Energy Conservation

Water and wastewater energy conservation opportunities include measures that reduce energy use within water and wastewater treatment facilities.

## Policy and Program Discussion

Water and wastewater energy policies and programs aim to reduce energy use within water and wastewater treatment facilities.

❖ **Water system energy and pump efficiency** programs repair water pumps and facilities to reduce energy costs.
❖ **Wastewater treatment energy efficiency** programs focus on energy optimization strategies and equipment and collection system upgrades. The California Wastewater Process Optimization Program (CalPOP) works with plant personnel to perform fee process audits, install new equipment and provide operator training to optimize systems. CalPOP is funded by California utility ratepayers under the California Public Utilities Commission (CPUC).
❖ **Equipment and collection system upgrades** include installation of cost saving devices to better monitor energy use, including variable frequency drives that allow a water or wastewater system to adjust operations to better manage energy use and cost.

## Existing Conditions

Table E-5 lists existing water and wastewater energy policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. Future water and wastewater energy conservation opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table E-5 Existing WRCOG Water and Wastewater Energy Conservation Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Water System Energy Efficiency** | | |
| **Water System Pumping Efficiency** | Hemet, Perris, Riverside, San Jacinto | |
| **Water Treatment Energy Efficiency** | Hemet | |
| **Waste Water Treatment Energy Efficiency** | | |
| **Wastewater Treatment Plant Process Energy Optimization** | Riverside | |
| **Wastewater Treatment Plant Equipment/ Collection System Upgrades (e.g. Speed Drives)** | Banning and Riverside | |

## Existing CAP Measures

Water and wastewater energy opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures

are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

## Corona
❖ R2-E 9: Solar power for Water Reclamation Facility #1

## Riverside County
❖ R2-E 9: Water use reduction initiative

# Solid Waste

Waste disposal creates emissions when organic waste (e.g., food scraps, yard clippings, paper and wood products) is buried in landfills and anaerobic digestion takes place, emitting methane. Additionally, extracting and processing raw materials for consumer products, distributing them to consumers, and disposing of them creates GHG emissions. In most California communities, between 1% and 3% of communitywide GHG emissions are typically associated with solid waste generation and disposal in landfills. The following discussion identifies existing local waste collection pricing, organic waste diversion, non-organic waste diversion/reduction, waste hauling operations, and waste-to-energy policies and programs within the subregion.

## Waste Collection Pricing

Waste collection and pricing practices vary within each jurisdiction in the WRCOG subregion.

### *Policy and Program Discussion*

The City of Riverside operates its own waste disposal and waste management divisions to provide services for business and residential customers, and relies on contracted private waste hauling services from Athens Services, Burrtec Waste Industries Inc., and CR&R Services. The remaining cities also contract with these private waste hauling service providers, or rely on Waste Management of the Inland Empire for waste hauling services. The landfills serving the WRCOG subregion are located in unincorporated areas of Riverside County, and the facilities are owned and operated by the County.

❖ **Consumer Behavior and pricing programs** offer varying rates and options for waste collection. Riverside offers both automated and manual trash pickup service. Automated service is offered once per week on the same day for all trash types (e.g., trash, recycling, green waste). Manual service is offered twice per week with trash being serviced one day, and recycling and green waste collected on another day. Rates are determined based on servicing curbside, backyard, mobile homes, or condominiums/multi-family units. Waste collection bills are delivered separately in Riverside. For jurisdictions served by Eastern Municipal Water District (EMWD), waste services are included on the water bill and residents automatically sign up for waste collection when signing up for water service. In the Western Municipal Water District (WMWD) service area, waste service bills are generally the responsibility of the city or Riverside County.

Waste disposal outreach programs can also provide information to customers regarding what is recyclable and compostable, how to dispose of electronic waste, and how to dispose of hazardous waste.

*Existing Conditions*

Table S-1 lists waste collection pricing policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. Waste collection pricing opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table S-1 Existing WRCOG Waste Collection Pricing Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Consumer Behavior/ Pricing** | | |
| **Separate Waste Bills** | Banning, Eastvale, Hemet, Norco Riverside, Wildomar | |
| **Consumer Education Billing Program** | Banning, Calimesa, Eastvale, Hemet, Norco, Riverside, Wildomar | |
| **Tiered-Rate Waste Collection Fee Program** | Banning, Calimesa, Eastvale, Hemet, Perris, Riverside, San Jacinto, Temecula, Wildomar | |

*Existing CAP Measures*

Waste collection and pricing opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

## Corona
❖ R3-S2: Waste education program

## Lake Elsinore
❖ S-1.2: Tiered solid waste rate structure

## Corona
❖ R3-S2: Waste education program

# Organic Waste Diversion

Each WRCOG jurisdiction was required to create an integrated waste management plan to increase diversion rates set by the Integrated Waste Management Act of 1989 (AB 939) to achieve 20% waste

reduction by 1995, and 50% waste reduction by 2000. Organic waste (e.g., food waste, yard waste) accounts for 14% of the statewide municipal waste stream; however, less than 3% of organic waste was diverted and recycled in 2010. Reducing, recovering, and recycling food waste and yard waste diverts organic materials from landfills and incinerators, reducing GHG emissions from landfill operations.

*Policy and Program Discussion*

Organic waste diversion methods used within the WRCOG subregion include the following:

- ❖ On-site **composting** is the intentional and managed decomposition of organic materials to produce compost for use as a soil enhancement. Food scrap and paper diversion creates compost, reducing the amount of solid waste to be collected, the cost of trash collection, and the volume of solid waste transported to landfills. Outreach efforts describe how and what to compost in homes and businesses, as well as the environmental and cost-saving benefits of composting.
- ❖ **Yard waste diversion** programs provide curbside yard waste collection to residents and commercial businesses. Yard waste is converted to compost available for purchase and use in local institutions and parks. The jurisdictions waste hauling provider informs its residents through outreach materials and their perspective websites regarding types of acceptable yard or green waste (i.e., grass, tree branches, plants, weeds, and garden trimmings).
- ❖ **Lumber diversion** ships wood chips away from the landfill. Wood chips are then used as a fuel supplement at cogeneration plants, compost feedstock, and cattle bedding. Outreach efforts inform the building industry and local developers of construction lumber diversion requirements and the benefits of recycling. Local construction and demolition waste ordinances require demolition contractors to reuse and recycle a percentage of their waste rather than disposing it in landfills.

*Existing Conditions*

Table S-2 lists organic waste diversion policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. The notes section of the table indicates the source of the policy or program and any additional information found beyond the individual jurisdiction's policy and program checklist. Organic waste diversion opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table S-2 Existing WRCOG Organic Waste Diversion Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| Food Scrap and Compostable Paper Diversion | | |
| **Outreach Campaign to Encourage Home/ Business On Site Composting** | Banning, Eastvale, Moreno Valley, Riverside, Wildomar | Moreno Valley Energy Efficiency and Climate Action Strategy (pg 10) |

| Table S-2 Existing WRCOG Organic Waste Diversion Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Outreach Campaign to Encourage Food Scrap and Compostable Paper Diversion** | Wildomar | |
| **Yard Waste Diversion** | | |
| **Yard Waste Collection Program** | All WRCOG jurisdictions | |
| **Outreach Campaign** | All WRCOG jurisdictions | |
| **Residential Yard Waste Diversion Notice** | San Jacinto | |
| **Lumber Scrap Diversion** | | |
| **Outreach Campaign to Building Industry** | Hemet, Riverside, San Jacinto, Temecula, Wildomar | |
| **Construction and Demolition Waste Diversion Ordinance** | Calimesa, Hemet, San Jacinto, Wildomar | |

## *Existing CAP Measures*

Organic waste diversion opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

### Lake Elsinore
❖ S-1.4: Construction and demolition waste diversion
❖ S-1.5: Green waste program

### Riverside County
❖ R2-S1: County diversion program (includes green waste component)
❖ R2-S2: Construction diversion program

# Non-Organic Waste Diversion/ Reduction

## *Policy and Program Discussion*

Non-organic waste diversion methods used within the WRCOG subregion include the following:

❖ Numerous **recycling** programs are offered in WRCOG jurisdictions including business recycling programs, computer and e-waste disposal recycling, and oil recycling. Recycling is offered both curbside and at local recycling centers to recycle materials that cannot be picked up curbside. Comingled (i.e., one bin) recycling is also being offered curbside in some jurisdictions, where

trash is then separated from recyclables at a private waste hauling facility. Commercial and multi-family residential recycling ordinances are required as part of the Mandatory Commercial Recycling measure in AB 32, as of July 1, 2012.

❖ **Source reduction** programs prevent waste by designing, manufacturing, purchasing, or using materials in ways that reduce the amount or toxicity of trash.

*Existing Conditions*

Table S-3 lists non-organic waste diversion pricing policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. The notes section of the table indicates the source of the policy or program and any additional information found beyond the individual jurisdiction's policy and program checklist. Non-organic waste diversion opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table S-3 Existing WRCOG Non-Organic Waste Diversion Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Recycling (Non-Paper)** | | |
| **Recycling Campaign** | Banning, Calimesa, Hemet, Moreno Valley, Perris, Riverside, San Jacinto, Temecula, Wildomar | Moreno Valley Energy Efficiency and Climate Action Strategy (pg 11) |
| **Curbside Recycling Collection** | All WRCOG jurisdictions | |
| **Local Recycling Collection Centers** | Banning, Calimesa Hemet, Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Comingled Waste Collection Program (One Bin)** | Hemet, Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Residential Recycling Ordinance** | Calimesa, Hemet, San Jacinto | |
| **Commercial Recycling Ordinance** | Calimesa, Hemet, San Jacinto | |
| **Source Reduction** | | |
| **Voluntary Waste Reduction Audits for Large Waste Generations** | Calimesa, Hemet, Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Compostable Carry-out Container and Disposable Utensil Ordinance** | San Jacinto | |

*Existing CAP Measures*

Non-organic waste diversion opportunities are outlined in existing CAPs within the subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are

technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

### Corona
❖ R2-S1: City diversion program

### Lake Elsinore
❖ S-1.1: Commercial recycling
❖ S-1.3: Recycling receptacles at City buildings and facilities

### Murrieta
❖ CSV-13: Solid waste is diverted from landfills through waste reduction, reuse, and recycling.

### Moreno Valley
❖ R2-S1: City diversion program. For solid waste, consider a target of increasing the waste diverted from the landfill to a total of 75% by 2020.

### Riverside County
❖ R2-S1: County diversion program. Exceed state requirements by diverting 75% of all waste from landfills by 2020.

## Waste Hauling Operations

### *Policy and Program Discussion*

All waste hauling service providers offer curbside waste hauling of trash, green waste, and recycling by robotic trucks. Used oil can also be picked up curbside for recycling if this service is part of the local jurisdiction's contract.

❖ **Low emission trucks and route optimization** reduce GHG emissions through fuel efficient vehicles and organized stops, while giving home and business owners low maintenance recycling options.

### *Existing Conditions*

Table S-4 lists waste hauling operations policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP.

| Table S-4 Existing WRCOG Waste Hauling Operations Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Waste Hauling** | | |
| **Low-Emission Waste and Recycling Trucks** | All WRCOG jurisdictions | |
| **Waste Hauling Route Optimization** | All WRCOG jurisdictions | |

*Existing CAP Measures*

None of the existing CAPs in the WRCOG subregion include waste hauling measures.

# Waste-to-Energy

Waste-to-energy programs create renewable energy from waste matter, reducing both GHG emissions and the volume of waste transported to landfills. Waste is processed through thermal technologies to be used as oil, or syngas (synthetic gas that can be converted to diesel fuel).

*Policy and Program Discussion*

Waste feed stocks that can produce energy include municipal solid waste, construction and demolition debris, agricultural waste (e.g., manure), industrial waste from mining, lumber mills, and the gases naturally emitted from landfills. Existing waste-to-energy programs in the WRCOG subregion are limited to programs run by the City of Riverside.

* ❖ **Methane capture** systems capture the gaseous byproducts of waste, consisting mainly of carbon dioxide and methane. Methane is a biogas collected by a system of wells and piping that can be burned directly in a boiler as a heat energy source. If the biogas is cleaned by removing water vapor, it can also be used in internal combustion engines or to generate electricity through gas turbines or fuel cells.
* ❖ **Biogas plants** place food-processing waste or agricultural waste into an airtight container known as a digester. The digester produces pure methane that can be burned in boilers or cleaned for use in engines or to generate electricity[4].

*Existing Conditions*

Table S-5 lists waste-to-energy policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. Waste-to-energy opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

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[4] The City of Norco received a $750,000 grant from the Department of Energy to construct a biomass facility to convert horse manure to energy, following a study by Chevron in 2008. In February 2012, the Norco City Council made the decision to move forward with the environmental review process for the facility.

| Table S-5 | | |
| --- | --- | --- |
| **Existing WRCOG Waste-to-Energy Policies and Programs** | | |
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Waste-to-Energy** | | |
| **Methane Capture System** | Riverside | |
| **Food waste Biodigester Energy Facility** | Riverside, Norco | |

*Existing CAP Measures*

Waste-to-energy opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

## Corona
❖ R3-S1: Encourage increased efficiency of the gas to energy system at landfills.

## Riverside County
❖ R3-S1: Encourage increased efficiency of the gas to energy system at landfills.

# Water

Water-related GHG emissions are mainly caused by energy used to pump, transport, heat, cool, and treat potable water. Emissions associated with this energy use typically account for 1% to 5% of a California jurisdiction's communitywide GHG inventory. With water supplies expected to continue declining into the future and uncertainty regarding reliability of continued Delta water supplies, water conservation strategies have the added benefits of aligning demand with future water availability, improving public health, and cost savings. EMWD, WMWD, and other water providers in the subregion have been leading long-standing water conservation efforts. The following discussion identifies existing water rate and pricing, indoor water efficiency, and outdoor water efficiency policies and programs within the subregion.

## Water Rates and Pricing

The scarcity of water in California has led the State to establish a 20% per-capita water use reduction requirement by 2020 through SB 7, the Water Conservation Act (2009). Water rates and pricing are among the methods to support conservation and reuse identified in California's 20x2020 Water Conservation Plan. The WRCOG subregion is served by local wholesale water suppliers including the,Western Municipal Water District (WMWD) and Eastern Municipal Water District (EMWD), both member agencies of the Metropolitan Water District (Metropolitan). The independent public utilities of

Riverside and Banning manage their own water supply under the Banning Water Division and Blue Riverside. Remaining water suppliers (i.e., Elsinore Valley Municipal Water District, Jurupa Community Services District, Rancho California Water District, and Yucaipa Valley Water District), are special districts serving various jurisdictions in the subregion[5]

## *Policy and Program Discussion*

Water scarcity in the subregion is addressed by the following existing water rate and pricing policies and programs that monitor consumer water use and encourage water conservation.

- ❖ **Water metering** charges home and business owners based on the amount of water that they use. Water metering was required by state law for all new construction in 1992. In 2004, the legislature passed AB 2572, requiring water suppliers to install water meters on all existing customer connections by 2025.
- ❖ **Tiered rate** pricing charges different rates for water use based on the amount of consumption over a period of time. Tiered rate structures generally consist of a base water use rate up to a certain level of consumption, after which the per-unit rate gets increasingly expensive. All water utilities within the WRCOG subregion employ tiered rate water pricing.
- ❖ **Consumer education billing programs** are important in conjunction with tiered rates to ensure that residents within the service area understand where their water is coming from, why it costs what it does, and what the benefits of conservation are.

### *Existing Conditions*

Table W-1 lists water rate and pricing policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. Water rate and pricing opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table W-1 Existing WRCOG Water Rate and Pricing Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Consumer Behavior/ Pricing** | | |
| **Consumer Education Billing Program (e.g. Comparative Use Indicators on Water Bills)** | Banning, Calimesa, Hemet, Norco, Perris, San Jacinto, Temecula, Wildomar | |
| **Water Metering** | Banning, Calimesa, Eastvale, Hemet, Norco, Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Tiered-Rate Pricing** | All WRCOG jurisdictions | |

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[5] As a special district, the water supplier's roles and responsibilities include providing public water service, developing and planning water supplies, treating and disposing of wastewater, and recycling.

## *Existing CAP Measures*

None of the existing CAPs in the WRCOG subregion include water rate and pricing measures.

# Indoor Water Efficiency

California's 20x2020 Water Conservation Plan also outlines water efficiency practices to conserve household water. Under the Water Conservation Act of 2009, starting on January 1, 2017, any California home built before January 1, 1994 will require water-conserving plumbing fixtures as a point of sale requirement. These and additional state water conservation requirements have led to the creation of local ordinances in the WRCOG subregion.

## *Policy and Program Discussion*

Indoor water efficiency policies and programs encourage or require water efficiency through financing programs, outreach, retrofit ordinances, and efficiency requirements to reach state water conservation targets.

- ❖ **New buildings** in Hemet and Norco are required to be above the water efficiency standards outlined in Title 24.
- ❖ Water conservation programs for **existing buildings** encourage water efficiency through education and outreach, financing options, assistance programs, and efficiency requirements.
  - ▪ **Outreach** and education are offered by the water districts in the form of classes, workshops, and online games for kids describing the importance of water efficiency and water conservation. EMWD has a water conservation theater program available to local schools at no cost. All cities also have access to classes by Metropolitan offered either in their service area or online at http://www.bewaterwise.com/training01.html.
  - ▪ **Financing** options are determined following audits that review domestic, sanitary, landscaping, and process water use and identify ways to increase a facility's water-use efficiency. A free water efficiency evaluation is available following completion of an application on WMWD's website: http://wmwd.com/forms.aspx?FID=80. Water efficiency systems upgrades are available with rebates reducing the prices of high-efficiency clothes washers, toilets, water-based irrigation systems, and toilets.
  - ▪ **Mandatory efficiency requirements** under the Water Conservation Act of 2009 require each retail supplier to develop water use targets. Disclosure notices and point-of-sale upgrade requirements give buyers and lenders access to water efficiency ratings of buildings.
- ❖ **Other programs** include WRCOG's HERO Program offering low-interest financing for energy and water efficiency improvements. Local water districts are also partnering with Southern California Gas Company's Energy Savings Assistance Program to provide income-qualified renters and homeowners with easy, no-cost solutions to help reduce energy use and save money.

## Existing Conditions

Table W-2 lists existing indoor water efficiency policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. The notes section of the table indicates the source of the policy or program and any additional information found beyond the individual jurisdiction's policy and program checklist. Indoor water efficiency opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table W-2 Existing WRCOG Indoor Water Efficiency Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **New Buildings/ Construction** | | |
| **Mandatory Water Efficiency Standard Above Code** | Hemet, Norco | |
| **Existing Buildings** | | |
| **Indoor Water Efficiency Outreach Campaign** | Banning, Calimesa, Perris, Riverside, San Jacinto, Wildomar | |
| **Indoor Water Efficiency/ Leakage Audit Programs** | Calimesa, Perris, Riverside, San Jacinto, Wildomar | |
| **Residential Water Conservation Assistance Programs** | All WRCOG jurisdictions | WRCOG HERO Program |
| **Rebate Programs** | Banning, Eastvale, Perris, San Jacinto, Wildomar | |
| **Water Conservation Ordinance (Point-of-sale, or Tenant Improvement)** | Banning, Eastvale, Norco, Riverside, San Jacinto | |

## Existing CAP Measures

Several future indoor water efficiency opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

### Corona
❖ R2-W1: Water use reduction initiative (water conservation program, new development incentives, water efficiency retrofit program)

### Lake Elsinore
❖ E-4.2: Indoor water conservation requirements

### Murrieta
❖ CSV-1: A community that conserves, protects, and manages water resources to meet long-term community needs, including surface waters, groundwater, imported water supplies, storm water, and waste water.

### Moreno Valley
❖ R2-W1: Water use reduction initiative. Consider adopting a per capita water use reduction goal which mandates the reduction of water use of 20% per capita with requirements applicable to new development and with cooperative support of the water agencies.
❖ R3-W1: Water efficiency training and education. Work with EMWD and local water companies to implement a public information and education program that promotes water conservation.

### Riverside County
❖ R2-W1: Water use reduction initiative

# Outdoor Water Efficiency

In the WRCOG subregion, 60% of residential water is used for landscaping, making it a critical area to conserve and practice water efficiency. State laws require outdoor water efficiency, which have led to adoption of multiple local water efficiency, conservation, and reuse ordinances within the subregion.

## *Policy and Program Discussion*

Outdoor water efficiency programs encourage and require design changes within individual projects to comply with state law. Rainwater, graywater, and recycled water offer new opportunities to reuse water, improving efficiency and reducing overall water use.

❖ **New/ redesigned landscape** requirements under AB 1881 (2006) led the Department of Water Resources to develop a model local water-efficient landscape ordinance for local agencies (WMWD Local Ordinance 375 and EMWD Local Ordinance 72.5). The model ordinance requires a landscape and irrigation design plan, irrigation audit, irrigation survey, and irrigation water use analysis. It also requires recycled water, storm water management, public education, environmental review, waste water prevention, and effective precipitation programs. Most WRCOG jurisdictions have adopted the model ordinance or a locally-tailored variation of the model. The efficiency requirements limit landscape watering and measure the performance of irrigation systems by the amount of water that is required, compared to the amount of water that is used. This ensures that landscapes are not being overwatered or watered incorrectly.
❖ **Existing landscape** programs focus on retrofitting built landscapes by using xeriscape principles to identify water use requirements, limit use of high irrigation turf, use low-water plants, increase irrigation system efficiency, and impose watering limits, among other techniques. Cash

incentives and rebates are also available to fund replacement of high water-use turf, including turf buy-back rebates and free sprinkler nozzles.

❖ **Rain water collection** systems store rainwater for reuse in evaporative coolers, and for toilet flushing, pet and car washing, indoor plant watering, pet and livestock watering, and lawn and garden irrigation. Outreach efforts inform residents and business owners about the benefits of rainwater collection and use.

❖ **Graywater systems** allow home and business owners to reuse water from showers, bath tubs, and washing machines. Outreach efforts inform residents that graywater is a resource and is safe for reuse for irrigation and toilet flushing, eliminating the need for a septic or sanitary sewer system. Local ordinances in Calimesa and Norco have legalized and are facilitating graywater use.

❖ **Recycled water** is former wastewater that is treated for either indirect potable or non-potable reuse. The City of Riverside Water Quality Control Plant treats all domestic and industrial wastewater generated within the city and the Jurupa Community Services District to produce high-quality treated effluent. EMWD has four regional wastewater facilities, and the EMWD Hemet/San Jacinto Regional Water Reclamation Facility has constructed wastewater wetlands to improve its treatment process and create wildlife habitat. Other jurisdictions in the WRCOG subregion are beginning to offer wastewater reuse, develop recycled water facilities, and inform the community about the benefits and safety of using recycled or reclaimed water.

❖ **Irrigation system efficiency** programs in the subregion include WMWD's Western Smart Yard™ community water-use efficiency program. Western Smart Yard uses smart irrigation controllers to avoid overwatering based on landscape characteristics including plant variety, soil type, sprinkler model, and slope angle. Irrigation schedules are adjusted automatically based on daily weather updates the controller receives wirelessly.

*Existing Conditions*

Table W-3 lists existing outdoor water efficiency policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. The notes section of the table indicates the source of the policy or program and any additional information found beyond the individual jurisdiction's policy and program checklist. Water efficiency opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table W-3 | | |
|---|---|---|
| **Existing WRCOG Outdoor Water Efficiency Policies and Programs** | | |
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **New/ Redesigned Landscapes** | | |
| **Water Efficient Landscape Ordinance** | Banning, Calimesa, Canyon Lake, Eastvale, Hemet, Moreno Valley, Norco, Perris, Riverside, San Jacinto, Temecula, Wildomar | Moreno Valley Energy Efficiency and Climate Action Strategy (pg 10) |
| **Mandatory Irrigation System Efficiency Requirements** | Calimesa, Canyon Lake, Eastvale, Moreno Valley, Perris, Riverside, San Jacinto, Temecula, Wildomar | Moreno Valley Energy Efficiency and Climate Action Strategy (pg 10) |
| **Landscape Watering Limits** | Calimesa, Norco, Perris, Riverside, San Jacinto, Wildomar | |
| **Existing Landscapes** | | |
| **Landscape Retrofit Outreach Campaign** | Calimesa, Perris, Riverside, San Jacinto, Wildomar | |
| **Lawn Conversion Cash Incentive Program** | Perris, Riverside, San Jacinto, Wildomar | |
| **Landscape Watering Limits (Time of Day, Days per Week)** | Eastvale, Riverside, San Jacinto | |
| **Mandatory Irrigation System Efficiency Requirements for Large Retrofits** | Riverside, Wildomar | |
| **Water Efficient Landscape for Large Retrofits** | Canyon Lake, Perris, Riverside | |
| **Rainwater Collection** | | |
| **Rainwater Collection Outreach Campaign** | Eastvale | |
| **Graywater Systems** | | |
| **Graywater Outreach Campaign** | Calimesa | |
| **Graywater Development Guidelines and Technical Support** | Hemet | |
| **Graywater Collection Requirements for New Construction** | Calimesa | |
| **Graywater Use Ordinance** | Calimesa, Norco | |
| **Recycled Water** | | |
| **Recycled Water Infrastructure Development Program** | Calimesa, Hemet, Norco, Perris, Riverside, San Jacinto, Temecula | |
| **Recycled Water Outreach Campaign** | Eastvale, Hemet, Perris, Riverside, San Jacinto, Temecula | |

| Table W-3 Existing WRCOG Outdoor Water Efficiency Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Recycled Water Infrastructure Requirements for New Construction** | Calimesa, Hemet, Perris, Riverside, San Jacinto | |
| **Recycled Water Use Ordinance** | Calimesa, Hemet, Riverside, San Jacinto | |

## *Existing CAP Measures*

Several future outdoor water efficiency opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

## Corona
❖ R2-W1: Water use reduction initiative (increased recycled water use)

## Lake Elsinore
❖ E-4.1: Landscaping ordinance

## Murrieta
❖ INF-2: Infrastructure for recycled water is expanded throughout Murrieta for irrigation and other non-potable uses.

## Riverside County
❖ R2-W2: Increased reclaimed water use

# Transportation/ Land Use

Transportation typically generates more than 50% of an individual California jurisdiction's communitywide emissions. These emissions are created largely by the number of vehicle miles traveled (VMT) by residents and employees. Long vehicle trips and high numbers of trips create high emissions. Successfully reducing vehicle emissions relies on reducing or shortening vehicle trips, either by making alternative modes of transportation (e.g., transit, bicycling, walking) more viable, or by increasing proximity of diverse land uses. Technological advancements in vehicle fuel efficiency will also reduce vehicular GHG emissions.

At the statewide level, Clean Car Standards of 2010 (AB 1493 (Pavley)) require an increase in the fuel efficiency of vehicles starting with model year 2012 and ending with model year 2025, and the Low Carbon Fuel Standard will decrease the carbon intensity of transportation fuels by 10% by 2020.

Additionally, statewide requirements for automotive service providers to check and inflate each vehicle's tires to the recommended tire pressure rating at the time of performing any automotive maintenance or repair service will result in GHG emission reductions. The following discussions identify existing local pedestrian and bicycle, transportation demand management (TDM), transit, traffic operations, and land use and urban design policies and programs that supplement these statewide programs within the subregion.

# Transportation

Riverside County is the second fastest-growing county in California, and is ranked fourth statewide for housing growth. To manage growth and resulting emissions, WRCOG has prepared three subregional transportation plans for bus rapid transit (BRT), non-motorized transportation, and electric vehicle transportation. Funding for these projects was provided by the Southern California Association of Governments (SCAG) as part of its Compass Blueprint Demonstration Program. Riverside Transit Agency (RTA) provides both local and regional transit service throughout the WRCOG subregion. In Corona and Banning, RTA coordinates regional services with locally-operated municipal transit systems.

Many transportation policies and plans are required under AB 32. Furthermore, targets and strategies to reduce GHG emissions from passenger vehicles by 8% per capita by 2020 and 13% percent per capita by 2035 compared to 2005 are identified in the SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Achieving these targets will require WRCOG communities to rely less on automobiles and more on alternative transportation modes. In addition, the Complete Streets Act of 2008 (AB 1358) requires cities and counties revising the circulation element of their general plan to identify how the jurisdiction will provide for the routine accommodations of all roadway users, including motorists, pedestrians, bicyclists, individual with disabilities, seniors, and public transportation users.

## *Policy and Program Discussion*

Transportation policies and programs in the WRCOG subregion include non-motorized or bike/pedestrian transportation, transportation demand management, intelligent transportation system operations, and transit services offered by Riverside Transit Agency (RTA).

❖ **Pedestrian and bicycle facilities** within the subregion are addressed in the Non-motorized Transportation Plan (NMTP). The NMTP provides a planned network of bicycle and pedestrian facilities to enhance mobility The NMTP identifies 28 bicycle and pedestrian routes and multi-jurisdiction connections within the subregion. Planned routes connect neighborhoods, schools, parks, shopping centers, employment centers, and transit centers. WRCOG coordinated with local jurisdictions to prepare the NMTP, working collaboratively with bicycle organizations, transportation agencies, large employers, and activity centers. The NMTP addresses state complete streets requirements by promoting "typical" design standards for route classifications, bike parking standards, sidewalk design standards, maintenance of on and off road facilities, optional street crossing standards, and pedestrian and bicycle safety standards.

❖ **Transportation demand management** programs reduce emissions and congestion and conserve energy by providing alternatives to single-occupancy vehicle trips for commuters within the

subregion. TDM programs are typically implemented through locally-adopted ordinances fulfilling requirements established by the South Coast Air Quality Management District (SCAQMD).

❖ RTA provides local and regional **transit services** throughout the WRCOG subregion, with 36 fixed-routes, eight CommuterLink routes, and Dial-a-Ride curb-to-curb advanced reservation service for seniors and persons with disabilities. RTA encourages transit use by reducing fares for seniors, youth, and persons with disabilities. Additional discounts are available for weekly passes, and RTA offers free fares to local college students.

❖ The WRCOG **Transportation Uniform Mitigation Fee (TUMF)** assists in providing transportation demand management throughout the subregion and ensuring that new development pays a fee for the increased traffic it creates. 2.6% of the $4 billion it will raise for transportation projects is allocated to the RTA for transit improvements.

❖ **Intelligent transportation systems** (ITS) facilitate efficient use of existing transportation system resources by incorporating new technology and creating a unified transportation network. ITS systems improve safety and performance of roadways using new technology to detect, communicate, compute, and control traffic. The Inland Empire ITS Strategic Plan was approved by the Riverside County Transportation Commission (RCTC) in 1997. The City of Riverside currently operates an ITS.

❖ **Alternative fuel vehicles** operated by RTA use compressed natural gas (CNG) technology to fuel buses. RTA operates CNG fueling stations in Riverside and Hemet. The CNG stations also serve other agencies, including Omnitrans and the City of Riverside. WRCOG prepared a Four-City Electric Vehicle Plan to create near-term and long-range transportation networks and scalable implementation strategies for Neighborhood Electric Vehicles (NEVs) in the cities of Corona, Norco, Riverside, and Moreno Valley. The WRCOG Clean Cities coalition supports local actions to reduce petroleum consumption for transportation. Clean Cities mobilizes other local stakeholders to expand the use of alternative fuels and implement idle reduction measures, accelerate deployment of alternative fuel vehicles, and improve and expand local refueling infrastructure. Through grants from the U.S. Department of Energy and the California Energy Commission, WRCOG's Clean Cities Coalition is participating in a regional Plug-In Electric Vehicle Study with SCAG and the South Bay Clean Cities Coalition.

## Existing Conditions

Table T-1 lists transportation policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the cities that have not yet prepared a CAP. The notes section of the table indicates the source of the policy or program and any additional information found beyond the individual jurisdiction's policy and program checklist. Transportation opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table T-1 Existing WRCOG Transportation Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Pedestrian and Bicycle** | | |
| **Pedestrian Environment Enhancements** | Banning, Calimesa, Hemet, Norco, Perris, Riverside, San Jacinto, Wildomar | |
| **Bike Safety Education Program** | Hemet, Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Bicycle Infrastructure Expansion (Paths, Lanes, Routes)** | Banning, Calimesa, Corona, Hemet, Norco, Perris, Riverside, San Jacinto, Wildomar | Corona CAP (page 4-4) |
| **Bike Parking** | Calimesa, Corona, Eastvale, Hemet, Norco, Perris, Riverside, San Jacinto, Temecula, Wildomar | Corona CAP (page 4-4) |
| **Bike Access to Transit** | Hemet, Riverside, San Jacinto, Wildomar | |
| **Bicycle Commute Facility Requirements for New Construction** | Banning, Eastvale, Hemet, Perris, Riverside, San Jacinto, Wildomar | |
| **Transportation Demand Management** | | |
| **Outreach Promotion** | Banning, Eastvale, Norco, Riverside | |
| **Employer Transportation Demand Management Requirements** | Banning, Calimesa, Corona, Hemet, Norco, Perris, Riverside, San Jacinto, Temecula | Corona Municipal Code 11.02, Corona CAP (page 4-3) |
| **Transit Fare Subsidies** | Banning, Riverside, San Jacinto, Wildomar | |
| **Carpool/ Rideshare Program** | Banning, Calimesa, Corona, Perris, Riverside, San Jacinto, Temecula, Wildomar | Corona CAP (page 4-4) |
| **Guaranteed Ride Home** | Riverside | |
| **Park and Ride Facilities** | Eastvale, Perris, Norco, San Jacinto, Temecula | |
| **Reduce Parking Perks** | Calimesa, Hemet, Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Parking Preference for Carpool** | Banning, Corona, Eastvale, Norco, Riverside | Corona CAP (page 4-4) |
| **Telecommuting/ Flexible Hours** | Banning, Calimesa, Corona, Eastvale, Hemet, Norco, Riverside, San Jacinto, Wildomar | Corona CAP (page 4-4) |

| Table T-1 Existing WRCOG Transportation Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Safe Route to School/ Rideshare Programs** | Banning, Calimesa, Corona, Eastvale, Hemet, Norco, Perris, Riverside, San Jacinto, Temecula, Wildomar | Corona CAP (page 4-4) |
| **Transit** | | |
| **Transit Route Expansion** | Banning, Calimesa, Eastvale, Norco, Perris, Riverside, Temecula, Wildomar | RTA sustainable funding policy |
| **Transit Route Frequency** | Banning, Calimesa, Eastvale, Hemet, Norco, Perris, Riverside, Temecula, Wildomar | RTA's Service Standards and Warrants |
| **Transit Stop Amenities** | Banning, Calimesa, Canyon Lake, Eastvale, Hemet, Norco, Perris, Riverside, Temecula, Wildomar | RTA's Bus Stop Design Guidelines and Service Standards and Warrants |
| **Transit Signal Priority** | Banning, Calimesa, Eastvale, Hemet, Norco, Perris, Riverside, Temecula, Wildomar | |
| **Bus Fleet Fuel Conversion (CNG/Hybrid/Electric** | Banning, Calimesa, Eastvale, Hemet, Norco, Perris, Riverside, Temecula, Wildomar | CNG vehicles are used for all large 40-ft buses (directly operated) and largely contracted buses. |
| **Transit Station Smart Parking** | Corona, Perris | Owned by RCTC Corona CAP (page 4-4) |
| **Free-fare Transit Zones** | Banning | |
| **Inter-Agency Transit Passes** | Banning, Calimesa, Eastvale, Hemet, Norco, Perris, Riverside, Temecula, Wildomar | Accepts OCTA, OMNI, and Metrolink |
| **Operations** | | |
| **Traffic Signal Coordination** | Banning, Calimesa, Eastvale, Hemet, Norco, Perris, Riverside, Temecula, Wildomar | Corona CAP - Advanced Traffic Management System (page 4-5) |
| **ITS Strategies** | Riverside | |
| **Fleet Management Upgrade** | Banning, Calimesa, Hemet, Moreno Valley, Norco, Perris, Riverside, Temecula | Moreno Valley Energy Efficiency and Climate Action Strategy (pg 12) |

## *Existing CAP Measures*

Several future transportation opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures

are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

## Corona
- ❖ R2-T1: Land use based trips and VMT reduction policies.
- ❖ R2-T2: Residential permit parking
- ❖ R2-T3: Bicycle master plan
- ❖ R2-T4: WRCOG Neighborhood Electric Vehicle Plan

## Lake Elsinore
- ❖ T-1.1: Safe routes to school
- ❖ T-1.2: Pedestrian infrastructure
- ❖ T-1.4: Bicycle infrastructure
- ❖ T-1.6: Public transit initiatives
- ❖ T-2.1: Designed parking for fuel-efficient vehicles
- ❖ T-4.1: Commute trip reduction program
- ❖ T-5.1: Hybrid and fuel-efficient vehicle incentives
- ❖ T-5.2: Municipal fleet vehicle purchasing policy

## Murrieta
- ❖ CIR-1: A circulation system that serves the internal circulation needs of the City, while also addressing the inter-community or through travel needs.
- ❖ CIR-2: A comprehensive circulation system that promotes safety.
- ❖ CIR-5: A supported regional transportation system that serves existing and future travel between Murrieta and other population and employment centers within southwest Riverside County and the larger region, and that accommodates the regional travel needs of developing areas outside the City.
- ❖ CIR-6: Alternative travel modes and facilities are available to serve residents and employers/employees and reduce vehicle miles traveled.
- ❖ CIR-7: Residential areas and activity centers are accessible to all pedestrians, including persons with disabilities or having special accessibility needs.
- ❖ CIR-8: Development, expansion, and maintenance of a network of bicycle, pedestrian, and multi-use trails that allows residents to travel between parks, schools, neighborhoods, and other major destinations without driving.
- ❖ AQ-4: Mobile source emissions are reduced by providing a balance of jobs and housing that serve the needs of the community.
- ❖ AQ-5: Air quality is improved through an efficient circulation system, reduced traffic congestion, and reduced vehicle miles traveled.

## Moreno Valley
- ❖ R2-T1: Land use based trips and VMT reduction policies.  Encourage the development of Transit Priority Projects along High Quality Transit Corridors identified in the SCAG Sustainable Communities Plan, to allow a reduction in vehicle miles traveled.

- ❖ R2-T3: Employment-based trip reductions. Require a TDM program for new development to reduce automobile travel by encouraging ride-sharing, carpooling, and alternative modes of transportation.

## Riverside County
- ❖ R2-T1: Employment-based trip and VMT reduction.
- ❖ R2-T4: Preferential parking.
- ❖ R2-T5: Roadway improvements including signal synchronization and transportation flow management.
- ❖ R2-T6: Provide a comprehensive system of facilities for non-motorized transportation.
- ❖ R2-T7: Expand renewable fuel/low-emission vehicle use.
- ❖ R2-T8: Anti-idling enforcement
- ❖ R2-T9: Increase public transit
- ❖ R2-T10: Employee commute alternative schedule

# Land Use

Focusing urban development around transit improves the effectiveness of public transportation systems and compact community design near transit stations advances numerous subregional community planning and development objectives.

## *Policy and Program Discussion*

Land use and development strategies are coupled with transportation planning policies to provide safe and efficient transportation, add character, create place, and foster development in desired areas. Increasing both density and diversity of land uses are effective ways to reduce communitywide GHG emissions from transportation sources. Most WRCOG jurisdictions have adopted general plans that seek to increase density and diversity of land uses using the following strategies.

- ❖ **Transit-oriented development**[6] incorporates transit into future and existing development. The WRCOG BRT route plan outlines six development-oriented transit stations; multimodal stations in Corona, Riverside, and Perris; a major bus transfer station in Menifee; an end of the line station at Riverside County Medical Center; a village center park-and-ride station in Dos Lagos; and a walk-up station at Abbott Labs.
- ❖ **Mixed-use development** enables people to live closer to transit routes and minimizes automobile use and travel needs. Mixed-use land use policies typically integrate combinations of retail, office, residential, institutional, recreation, and civic uses.
- ❖ **Neighborhood center development** focuses on improving neighborhood livability by improving bike and pedestrian networks, encouraging business coordination and economic development, and conducting community events to create neighborhood identity.

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[6] WRCOG prepared the Transit Oriented Development (TOD) Study Guiding Principles and Policies; TOD best practices Study; and Transit-Oriented Development Survey Report.

- ❖ **Corridor planning** through Interregional partnerships with the San Diego Association of Governments (SANDAG) and Orange County Council of Governments (OCCOG) foster collaborative economic development, transportation, and housing strategies along the I-15 and SR-91 corridors. The goal of these partnerships is to improve the quality of life of residents by reducing the impacts of interregional commuting, creating more jobs in housing-rich areas, and creating more housing in job-rich areas. This is achieved by encouraging and facilitating infill development, mixed use development, and workforce housing and business site selection initiatives.

## *Existing Conditions*

Table LU-1 lists land use policies and programs in place within jurisdictions in the WRCOG subregion, focusing on jurisdictions that have not yet prepared a CAP.

| Table LU-1 Existing WRCOG Land Use Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Land Use and Urban Design** | | |
| **Transit Oriented Development** | Hemet, Perris, Riverside | |
| **Mixed-Use Development** | Banning, Calimesa, Eastvale, Hemet, Norco, Perris, Riverside, San Jacinto, Temecula | |
| **Neighborhood Center Development** | Hemet, Perris, Riverside, San Jacinto | |

## *Existing CAP Measures*

Several future land use opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

## Corona
- ❖ R2-T1: Land use based trips and VMT reduction policies

## Lake Elsinore
- ❖ T-3.1: Mixed-use, high density, infill and transit oriented development

## Murrieta
- ❖ LU-1: A complementary balance of land uses throughout the community that meets the needs of existing residents and businesses as well as anticipated growth, and achieves the community's vision.
- ❖ LU-5: Promotion of quality industrial development that provides local employment opportunities.

- ❖ LU-6: Land use policy that encourages job retention and attraction.
- ❖ LU-8: A community that provides opportunities for mixed use and/or transit-oriented development.
- ❖ LU-9: Land use patterns and urban design that support healthy and sustainable lifestyles and businesses.

### Moreno Valley
- ❖ R2-T1: Land use based trips and VMT reduction policies. Encourage the development of Transit Priority Projects along High Quality Transit Corridors identified in the SCAG RTP/SCS, to allow a reduction in vehicle miles traveled.

### Riverside County
- ❖ R2-T2: Increased residential density
- ❖ R2-T3: Mixed-use development

# Green Infrastructure

Street trees and trees on private property are valuable community assets. Trees beautify neighborhoods, increase property values, reduce noise and air pollution, keep buildings cool in the summer, create privacy, and establish habitat for bird species. The urban forest also captures and stores carbon as the trees grow. Building integrated vegetation (e.g., green roofs) cool buildings and control stormwater runoff while reducing GHG emissions. The following discussions identify existing local urban forestry and building integrated vegetation policies and programs within the WRCOG subregion.

## Urban Forestry

*Discussion*

The urban forest provides environmental benefits by reducing energy use and sequestering carbon. Urban forestry programs can also enhance property values and quality of life for residents.

- ❖ **Urban forestry** programs in Riverside result from a partnership between the City Council; Parks, Recreation and Community Services Commission Urban and Community Forest Subcommittees; and Public Works. Funding for urban forestry projects in Riverside comes from the City's Perpetual Tree Care Fund, the Adopt-a-park program, and community grants. Tree planting campaigns and requirements are part of the urban forest plan, which also includes guidelines recommending where and what species of tree should be planted at given locations. Riverside has established a goal to plant trees on all vacant City properties.
- ❖ **Habitat restoration** objectives in the WRCOG subregion are outlined in the Western Riverside County Multiple Species Habitat Restoration Plan (MSHCP). The MSHCP is a comprehensive, multi-jurisdictional plan to conservation sensitive species and their associated habitats in the subregion. The MSHCP allows WRCOG jurisdictions to make land use decisions and maintain a

strong economic climate in the subregion in a context that comprehensively addresses federal and state Endangered Species Acts (ESA and CESA) requirements.

*Existing Conditions*

Table G-1 lists urban forestry policies and programs in place within jurisdictions in the WRCOG subregion, focusing on jurisdictions that have not yet prepared a CAP. The notes section of the table indicates the source of the policy or program and any additional information found beyond the individual jurisdiction's policy and program checklist. Urban forestry opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table G-1<br>Existing WRCOG Urban Forestry Policies and Programs | | |
|---|---|---|
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Urban Forest** | | |
| **Urban Forest Master Plan** | Riverside | |
| **Urban Forestry Program** | Perris, Riverside | |
| **Tree Planting Campaign** | Norco, Perris, Riverside, San Jacinto, Temecula | |
| **Mandatory Tree Planting Requirements for New Development** | Calimesa, Eastvale, Hemet, Norco, Perris, Riverside, San Jacinto, Temecula, Wildomar | |
| **Habitat Restoration** | All WRCOG jurisdictions | Western Riverside County MSHCP |

*Existing CAP Measures*

Several future urban forestry opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emission; they may be expanded to the rest of the subregion.

# Corona
❖ R3-L1: Expand City tree planting.

# Murrieta
❖ CSV-9: A community that promotes the growth of an urban forest and water-efficient landscaping, recognizing that plants provide natural services such as habitat, storm water management, soil retention, air filtration, and cooling, and also has aesthetic and economic value.

Riverside County
❖ R3-L1: Expand County tree planting.

# Building Integrated Vegetation

Building integrated vegetation is a design relationship that supports plant growth within the architectural concept of a building. Building integrated vegetation improves building aesthetics, manages storm water, reduces energy use, moderates the urban heat island effect, and improves air quality.

## *Policy and Program Discussion*

Building integrated vegetation policies and programs in place within the WRCOG subregion include the following:

❖ **Green roofs** describe the extension of existing roofs with high-quality water proofing and root repellant systems, a drainage system, filter cloth, a lightweight growing medium, and plants. In addition to reducing GHG emissions, installing green roofs also improves community aesthetics, diverts waste, creates new public amenities, and creates new local jobs.

❖ **Building shade trees** reduce building air conditioning demands and GHG emissions. Trees and vegetation lower surface temperatures and air temperatures by providing shade through evapotranspiration (i.e., using heat from the air to evaporate water). Additionally, mandating shade trees in building codes can reduce pavement maintenance costs.

## *Existing Conditions*

Table G-2 lists building integrated vegetation policies and programs in place within jurisdictions in the WRCOG subregion, focusing on the jurisdictions that have not yet prepared a CAP. Building integrated vegetation opportunities are also identified based on programs in adopted CAPs throughout the subregion, and the policy and program gap reviews completed by the remaining jurisdictions.

| Table G-2<br>Existing WRCOG Building Integrated Vegetation Policies and Programs | | |
| --- | --- | --- |
| **Existing Policies and Programs** | **Participating Jurisdictions** | **Notes** |
| **Green Roofs** | | |
| **Green Roof Promotion** | Riverside | |
| **Building Shade Trees** | | |
| **Shade Tree Campaign** | Banning, Perris, Riverside | |
| **Shade Tree Incentives** | Banning, Riverside | |
| **Mandatory Shade Tree Requirements** | Calimesa, Canyon Lake, Norco, Perris, Riverside, San Jacinto, Temecula | |

*Existing CAP Measures*

Several future building integrated vegetation opportunities are outlined in existing CAPs within the WRCOG subregion. By including these measures within their CAPs, these jurisdictions have determined that the measures are technically and politically feasible. Given that these measures have been identified in a CAP; and in some cases, are already reducing GHG emissions; they may be expanded to the rest of the subregion.

### Corona
- ❖ R3-L2: Heat island plan

### Murrieta
- ❖ CSV-9: A community that promotes the growth of an urban forest and water-efficient landscaping, recognizing that plants provide natural services such as habitat, storm water management, soil retention, air filtration, and cooling, and also has aesthetic and economic value.

### Moreno Valley
- ❖ R3-L2: Heat island plan. Develop measures that address "heat islands."  Potential measures include using strategically placed shade trees, using paving materials with a Solar Reflective Index of at least 29, an open grid pavement system, or covered parking.

### Riverside County
- ❖ R3-L2: Heat island plan

# Conclusion and Next Steps

This memorandum summarizes existing emissions-reducing policies and programs implemented by WRCOG jurisdictions, including programs offered by WRCOG and SCE. Local agency staff and the WRCOG Planning Directors Technical Advisory Committee (PD TAC) will consider this information to establish a selection of regionally feasible GHG reduction measures. Considerations to assess the feasibility of these measures will include required staffing levels, ease of implementation, visibility, educational impact, GHG reduction potential, the cost and savings to local government, and the cost and savings to residents and businesses. AECOM will quantify these measures for each jurisdiction and document them in the WRCOG subregional CAP.