

Cal-OSHA requires all employers to provide Material Safety Data Sheets (MSDS) to their employees for all chemicals used in the workplace. The MSDS contain information on the potential hazards and the proper handling of chemicals used in the workplace. Uses of hazardous chemicals in the workplace and manufacturing are enforced under state laws (Cal-OSHA, Hazardous Waste Regulations, etc). However, this does not guarantee worker safety in that OSHA has adopted workplace exposure limits for only 193 or about 7% of the 2,943 chemicals produced or imported in the U.S. ¹

Reduced Deliveries

In some City facilities, drinking water is supplied through private vendor water delivery trucks, which emit carcinogenic diesel exhaust throughout each delivery run. Installation of water purification filters on existing drinking fountains would result in the elimination of vendor delivered bottled water. A long-term cost-savings is likely to result; fewer resources devoted for the production of plastic water containers; and less global greenhouse gas emitted through the container production. This exemplifies how one action can have a positive impact on other sustainability measures.

Integrated Pest Management

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life-cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. The Integrated Pest Management approach uses known (often organic) compounds, fertilizers produced from natural materials, even beneficial insects, minerals, and salts, to achieve success. Extra up-front work to design and plan the system will be required to create a successful landscape and pest management plan.

Buy Green

Also called “affirmative procurement,” and “environmentally responsible purchasing,” green purchasing is the procurement of recycled content products, energy-efficient products and renewable energy technologies, alternative fuel vehicles and alternative fuels, biobased products, environmentally preferable products and services, and non-ozone depleting substances. Many agencies and cities have green purchasing policies in place that can be used as examples in tailoring a policy for Pasadena.

There are numerous federal laws, policies, and executive orders that mandate green purchasing by federal, state, and local governments. The 1984 amendments to the Resource Conservation and Recovery Act require governmental agencies to use environmentally preferable purchasing. This requirement applies to any federal, state, or local procuring agency (or governmental contractor that uses federal funds) that spends more than \$10,000 a year on a specific item. For example, if a city agency spends more than \$10,000 a year on EPA-designated items and part of that money is

from appropriated federal funds, then the agency must purchase that item made from recovered materials.

See Action Item 5 for more information on green purchasing.

UNITED NATIONS 2005 URBAN ENVIRONMENTAL ACCORDS

ACTION 17 - HEALTHY FOODS

Action: Promote the public health and environmental benefits of supporting locally grown organic foods. Ensure that 20% of all city facilities (including schools) serve locally grown and organic food within seven years (2012).

Status: Likely

Comments:

The City does not have facilities that serve food except for limited vending machines and catered food purchased for public meetings. By continuing to support the local Farmer's Markets, the various activities of the Public Health Department, and the efforts of the PUSD described below, this action warrants an achieved status by 2012.

Recommendations:

1. City Food Vendors – Investigate the feasibility of requiring City food vendors (catered food) to provide a minimum of 20% locally grown organic food in orders received by the City.
2. Food Vendor Training – Educate and train owners of retail food markets and produce trucks about the availability of organic food products as an alternative food supply for residents through the Public Health Department MAP Campaign.
3. Resident Outreach – Provide outreach to residents on how to eat better by including organic food in their diets and to read and understand nutrition labels through the Public Health Department MAP Campaign.
4. Community Gardens – Seek opportunities for community gardens like the Oakland and Summit community gardens where local residents can grow their own vegetables free of pesticides.
5. School Programs – Continue to collaborate with the PUSD in efforts that improve children's accessibility to locally grown organic food, and other related health benefits.

Background:

Farmers' Markets

Certified Farmers' Markets are held weekly at two locations in Pasadena; Villa Park on Tuesday mornings; and Victory Park on Saturday mornings. These successful and well

attended certified farmers' markets are approved market sites by the County Agricultural Commissioner and the Health Department. They are part of a statewide program meant to increase the sustainability of small farmers by connecting the farmer with the consumer. All farmers selling at a Certified Farmers' market must have a Certified Producers Certificate from their local Agricultural Commissioner verifying that they grow the items that they sell. At the farmers' markets located in Pasadena, organic produce is offered by some vendors.

Farmers' Market Nutritional Program

Congress provides funds for the Farmers' Market Nutritional Program (FMNP) which provides coupons to low income mothers, children, and seniors that can be used to purchase fresh produce at farmers' markets. Federal funds support 100 percent of the food costs of the program and 70 percent of the administrative costs. States operating the FMNP must match the Federal administrative funds allocated to them for administrative costs by contributing at least 30 percent of the total administrative cost of the program.

The FMNP coupons are accepted at both Pasadena Farmers' Markets. In fact, Pasadena has the third highest redemption rate in the State of California. The Pasadena Farmer's Market coordinator estimates that \$20,000 worth of coupons are redeemed each year at the markets in Pasadena.

MAP Campaign

Although this Action is specific to locally grown organic food, the City is in the process of identifying means of improving the community's health and well being through the MAP Campaign. Spearheaded by the Pasadena Public Health Department, MAP is dedicated to identifying important community health issues, securing resources for addressing them, and developing an action plan. This community health improvement model was developed by the Centers for Disease Control and Prevention in collaboration with the National Association for City and County Health Officials. MAP's vision is for the greater Pasadena area to become a healthy, thriving community that values and promotes overall wellness.

PUSD

The Pasadena Unified School District (a separate agency from the City of Pasadena) is actively engaged in improving nutrition awareness and availability of healthy foods for students. PUSD is a recipient of a federal Nutrition Network Grant which educates low-income school age children on proper nutrition. Part of the grant includes a "Harvest of the Month" program in which one farm product is featured in school menus. For example, during the month of April, strawberries were featured. In April 2006, PUSD received a California State grant allowing for two fresh fruits to be offered at breakfast in the school cafeterias. The majority of the fresh produce is grown locally (in California) and procured through a vendor, California Produce.

As recently as April 2006, the Community Alliance with Family Farmers engaged in conversation with PUSD regarding the Farm-to-School Program which brings fresh,

locally-grown and unprocessed fruits and vegetables into school cafeterias across California. Farm to School educates children about their relationship to agriculture, the environment and the food they eat.

PUSD is preparing a "wellness policy" that will outline recommendations for improving the nutritional choices offered on campus, and it is expected that this policy will be presented to the school board in 2006. PUSD reaches out to the greater community by participating in various health fairs conducted in the local area.

YMCA

The Pasadena Chapter of the YMCA offers information on packing healthy lunches and other nutritional information for children participating in their after-school programs.

Organic Food

Organic food is offered at most major grocery stores within the City and at specialty stores including Whole Foods, Trader Joes and Wild Oats. The *Los Angeles Times* published an article on organic farming on April 9, 2006 in which it was stated that sales of organic food and beverages have increased on average of 20% a year in the U.S., with U.S. imports of organic products estimated at \$1 billion to \$1.5 billion a year. The number of U.S. farmers growing organically has surged although it was stated that they still cannot meet U.S. consumer demand.

Excerpts from the Natural Resources Defense Council Website

Over the last 50 years, farming across the United States and beyond has become increasingly reliant on pesticides, fertilizers, and hormones. While this has contributed to a substantial rise in yield, it may wreak havoc on human health and the natural environment. In response, thousands of farmers across the country have switched to organic growing methods. By supporting their efforts, an increasing number of consumers are helping to protect their bodies and the environment.



The concept of organic food is simple: If it's produced without the aid of chemical pesticides and is processed only with natural additives, it's organic food. What's far more challenging is trying to determine whether a head of lettuce or loaf of bread at your local supermarket actually meets these requirements.

As of October 2002, shopping for organics became much easier. The U.S. Department of Agriculture put in place a national system for labeling organic food. Although states can continue to maintain their own certification programs their requirements cannot be less strict than the national guidelines. For a long time California's program was the de facto standard for organic farmers.

Under the 2002 standards, produce and other foods that consist of at least 95 percent organic ingredients can carry the USDA's organic seal, while foods that are at least 70 percent organic can bear the phrase "Made With Organic Ingredients." Animal products

certified as organic must come from livestock that has had access to the outdoors, has not been treated with hormones or antibiotics and has been reared on organic feed.

These standards are much stricter than those the USDA initially proposed, which would have permitted the use of genetically modified foods and sewage-based fertilizers. Angry letters from the public - 275,000 of them - sent the USDA back to the drafting board.

Even with these labeling rules in place consumers should be prepared for some confusion when shopping for organic foods. For one thing, organic products are not uniformly labeled because many farmers using organic methods but do not pursue certification. And, as some small organic farmers point out, the standards do not differentiate between foods produced by small-scale, eco-friendly farms and those produced by huge factory-style farms - which take a heavy toll on the environment whether they use organic methods or not.

There are numerous problems associated with traditional chemically-dependent, land-intensive agriculture:

- **Topsoil erosion.** One-third of our nation's topsoil has eroded due to modern industrialized farming practices. Not only does each lost inch cause a 6% drop in farm yields, but it also leads to increased flood exposure as a result of siltation.
- **Toxic runoff.** Pesticide-heavy runoff from farmland into rivers, lakes, and streams takes a toll on wildlife. Riparian habitats within watersheds are destroyed by chemical contamination. Additionally, the conversion of wild habitat to agricultural land significantly reduces fish and wildlife populations through erosion and sedimentation, the effects of pesticides, removal of riparian plants, and the diversion of water.
- **Decreased biodiversity.** With its emphasis on yield, uniformity, market acceptability and pest resistance, present-day agricultural norm sacrifices variety of species. Before the advent of modern industrialized agriculture, farmers produced roughly 80,000 species of plants; today farmers rely on about 150. The increasing reliance on a small number of crop species means declining nutritional variety for consumers as well as increased strain on overburdened farmland.
- **Health risks.** Heavy reliance on pesticides by conventional farmers is suspected of leading to increased rates of cancer and reproductive problems in humans. More than 80% of the most commonly-used pesticides today have been classified by National Academy of Sciences researchers as potentially carcinogenic -- and are routinely found in mothers' milk.

UNITED NATIONS 2005 URBAN ENVIRONMENTAL ACCORDS

ACTION 18 - AIR QUALITY

Action: Establish an Air Quality Index (AQI) to measure the level of air pollution and set the goal of reducing by 10% by 2012 the number of days categorized in the AQI range as "unhealthy" or "hazardous."

Status: Achieved – Establish an Air Quality Index
Unknown – Reduce unhealthy days

Comments:

Air quality is a regional issue of significant impact requiring substantial analysis to adequately address. The first part of the action, establishing an AQI, has been achieved. Staff cannot determine at this time whether a reduction of hazardous days by 10% can be accomplished without further study and establishing a benchmark from which to measure the reduction. Consistent and reliable data on how air quality is measured, the scale for which unhealthy air is gauged, and the geographic area defining the air region must be determined.

The Southern California Air Quality Management District's (SCAQMD) comprehensive, multi-year strategy for reducing air pollution is contained in the *2003 Air Quality Management Plan*. This triennial plan prepared in conjunction with the Southern California Association of Governments (SCAG) complies with the federal Environmental Protection Act (EPA), Clean Air Act, and California Air Resources Board air quality mandates. An updated report is anticipated for release in 2007. The 2003 report concludes that air quality in the Los Angeles basin has improved in the past two decades, with days exceeding federal 1-hour standards reduced from 200 to 50 days.

Recommendations:

1. Air Quality Plan – Develop and implement a plan for analyzing and developing recommendations for improving air quality for Pasadena with the realization that air pollution has serious local consequences irrespective of city, county or other jurisdictional boundaries. Consider consulting with air quality experts to address this issue.
2. Air Quality Legislation – Follow the progress of legislation including California Senate Bill 44 requiring local cities to adopt an Air Quality Element to their General Plans as to implications for Pasadena.

Background:

EPA

The EPA calculates the AQI for five major air pollutants regulated by the Clean Air Act; 1) ground-level ozone, 2) particle pollution or particulate matter-PM, 3) carbon monoxide, 4) sulfur dioxide, and 5) nitrogen dioxide. For each of these pollutants, the EPA has established national air quality standards to protect public health.

The ground-level ozone in the lower atmosphere (troposphere) should not be confused with the natural protective layer of ozone in the upper atmosphere (stratosphere). Although both are made of the same molecules (ozone), the ozone in the upper atmosphere protects life on earth from the sun's harmful ultraviolet rays, while the ozone in the lower atmosphere has a direct impact on animal health.

SCAQMD

As the regulatory body for air quality throughout the Southern California region, the SCAQMD adopted the EPA Air Quality Index (AQI) to measure the level of air pollution in Southern California on a daily basis. The AQI focuses on health effects individuals may experience within a few hours or days after breathing polluted air. The AQI further breaks air pollution levels into six categories, each of which has a descriptor (name), an associated color, and advisory statements to go along with it. Using this index and data found in the American Lung Association *State of the Air 2006* report, the Los Angeles area experienced 45 unhealthy days, and 16 very unhealthy days. The Los Angeles Air Basin includes Pasadena, but this is not a geographic area that Pasadena can control in terms of reducing number of unhealthy days.

Index Value	Descriptor	Color	Advisory
0 to 50	Good	Green	None
51 to 100		Yellow	Unusually sensitive individuals should limit prolonged outdoor exertion
101 to 150	Unhealthy for Sensitive Groups	Orange	Children, active adults, and people with respiratory disease, such as asthma, cardiovascular disease, or diabetes should limit prolonged outdoor exertion
151 to 200	Unhealthy	Red	Everyone may begin to experience health effects and should limit prolonged outdoor exertion; members of sensitive groups may experience more serious effects
201 to 300	Very Unhealthy	Purple	Everyone may experience more serious effects and should limit outdoor exertion
301 to 500	Hazardous	Maroon	The entire population is likely to be affected. Everyone should avoid all physical activity outdoors.

California Senate Bill 44 - Air Quality Element

Introduced in 2005, discussion is taking place in the California Senate for requiring all cities and counties to either add an air quality element to their general plans or amend the appropriate elements of their general plans to include data and analysis, comprehensive goals, policies, and feasible strategies intended to contribute to and complement other local, regional, state, and federal strategies to improve air quality by specified dates.

SB 44 passed through a variety of Senate committees and the full Senate on a 23-6 vote. It then passed through the Assembly Committees on Local Government and Appropriations, but was not voted out of the full Assembly. It may be re-introduced in 2006.

SCAG

The Southern California Association of Governments (SCAG) is the largest regional planning agency in the nation, functioning as the metropolitan planning organization for six counties including Los Angeles. SCAG develops long-term solutions for regional challenges such as transportation, air quality, housing, growth, hazardous waste and water quality.

In 2003, SCAG initiated extensive outreach efforts involving public, private, educational and nonprofit groups from six counties to craft a far-sighted common vision to address quality of life issues for the region. The goal was to make the SCAG region a better place to live, work and play through improved mobility and cleaner air. The resulting plan, *Southern California Compass*, focuses on pilot and voluntary demonstration programs to target technical assistance to cities containing critical growth opportunity areas as identified in the "2% Strategy" and to provide the proper tools and training to encourage participation and cooperation.

Southern California Compass provided much of the strategic direction for SCAG's *Destination 2030* plan. *Destination 2030* presents an assessment of the overall growth and economic trends for the SCAG region over the next two decades and provides strategic direction for transportation investments during that period. It is a catalyst for linking various transportation agency investments within the SCAG region to provide a cohesive, balanced and multimodal transportation system that meets mobility, air quality, and other regional goals within feasible financial constraints.

The SCAQMD reported that while there has been drastic improvement in the last several years, the Southern California basin still exceeds the federal 1-hour standard more frequently than any other location in the United States and the basin is designated as an "extreme" noncontainment area for ground level ozone.

Pasadena Mobility Element

Though pollution from stationary sources contributes to poor air quality, Pasadena's air quality is primarily impacted by mobile (vehicle) sources. The following excerpts from the City of Pasadena 's 2004 *Mobility Element* relate to air quality and Action 18:

Innovations exist to mitigate these pollutants, including integrated traffic management on freeways and arterials which will reduce traffic impact on local streets caused by regional through traffic. Moreover, automated traffic signal systems can improve air quality by up to 10 percent.

Pasadena's location within the metropolitan area makes it not only a regional destination but also a crossroad for regional through trips of vehicular traffic. The I-210 Freeway and the SR-135 Freeway connect the San Gabriel Valley to the San Fernando Valley on the west and to the Inland Empire on the east. Likewise, the I-210 Freeway and the I-710 Freeway connect jobs in the Long Beach and South Bay corridors to growing residential areas in northern Los Angeles County. Thus, Pasadena streets experience a significant amount of non-Pasadena traffic as through traffic traverses the City on route to different parts of the regions. Most of these regional trips are served by the freeway system during a portion of their travel.

Through trips on City streets in the southwest portion of the City are caused by the gap in the I-710 Freeway. Along Pasadena Avenue, St. John Avenue, and the north-south sections of Orange Grove Boulevard, more than 30% of the traffic flow has neither an origin nor destination in Pasadena. These through trips add to congestion in these corridors. They also impact the immediate neighborhoods by adding congestion.

It is important that Pasadena continue to promote regional transportation improvements. Analysis indicates that a 10% increase in regional through traffic can reduce the operation of the streets in Pasadena by a full Level of Service (LOS). Also analysis indicates that improvements in regional transit services such as extension of the Gold Line to the City of Claremont can improve travel on City streets by a commensurate level.

American Lung Association

Founded in 1904 to fight tuberculosis, the American Lung Association is the oldest voluntary health organization in the United States. Released in April 2006, the American Lung Association *State of the Air: 2006* report takes a close look at pollution from marine and locomotive sources which contribute significantly to air pollution. In terms of ozone and particle pollution, the report ranks Los Angeles County as among the worst in the nation for which it received an "F" (fail grade) for number of orange, red and purple days (see chart above). The report data on air quality throughout the United States were obtained from the EPA's Air Quality System (AQS), formerly called Aerometric Information Retrieval System (AIRS) database.

In response to a lawsuit filed by the American Lung Association, the EPA in 1997 set a more protective ozone standard of 0.08 ppm averaged over an eight-hour period. Compliance is based on the fourth highest reading per year averaged over three years.

The national ozone standard is under review as a result of another legal action brought upon by the American Lung Association. The EPA had not formally reviewed scientific research on ozone since 1996, although the Clean Air Act requires such reviews every five years. The American Lung Association took legal action in December 2002, to require the Agency to schedule a formal review. In a settlement, EPA agreed to complete that review by December 2007.

UNITED NATIONS 2005 URBAN ENVIRONMENTAL ACCORDS

ACTION 19 - WATER EFFICIENCY

Action: Develop policies to increase adequate access to safe drinking water aiming at access for all by 2015. For cities with potable water consumption greater than 100 liters per capita per day, adopt and implement policies to reduce consumption by ten percent by 2015.

Status: Achieved - Safe Drinking Water
Likely - Reduce Water Consumption

Comments:

The City complies with all state and federal water quality standards to ensure safe drinking water for all its customers. Consequently, the City is in compliance with the first part of the action.

Action 19 also requests cities with potable water consumption greater than 100 liters per capita per day to adopt and implement policies to reduce consumption by ten percent by 2015. The City is working towards compliance with this policy by implementing the conservation programs outlined below. Over the last ten years, the implementation of conservation measures has contributed to a decrease in the City's water consumption by almost 7.5% (from 817 liters per capita per day to 756 liters per capita per day).

For the past decade, the City has supplied an average of 37,263 acre feet (AF) of water per year to service area consumers. By 2015, 41,291 AF of water is projected to be consumed per year (City's 2005 *Urban Water Management Plan*). It is forecasted that population growth will be approximately 7% in the next 10 years. The 10% reduction goal from projected usage amounts to a maximum of 37,162 AF of water consumed in 2015 – essentially no net additional water usage for the next 10 years. With increased population and development, consistent with the City's adopted General Plan (Land Use Element), this 10% reduction in potable water usage may be achievable only if the City adopts an aggressive water conservation program along with existing conservations measures that help reduce the City's dependence on increased quantities of potable water.

Recommendations:

1. Water Conservation Programs – Continue to offer programs to both residential and commercial customers that aggressively encourage the purchase and installation of the water efficient fixtures and devices.

2. Green Building Water Efficiency – Amend the Green Building Practices Ordinance to mandate all applicable projects achieve a water use reduction of 20% over baseline.
3. Irrigation Efficiencies – Focus municipal programs on outdoor water efficiencies, such as weather based irrigation controllers and drought tolerant landscaping.
4. Time of Sale Replacement Program – Adopt an ordinance requiring replacement of inefficient plumbing fixtures (toilets, urinals, shower heads, etc.) when properties located in Pasadena change ownership through the Occupancy Inspection Program.
5. Gray Water – Amend the code to allow use of gray water (untreated wastewater salvaged from baths, showers, clothes washers, and lavatories) for the safe use in irrigation of landscaping.
6. Landscape Water Meter – Provide a cost/benefit analysis of requiring the installation of dedicated water meters for landscape irrigation on properties larger than 20,000 square feet.
7. Emerging Technologies – Continue working with the Metropolitan Water District to research, develop and implement existing and emerging water efficiency technologies and strategies that will accomplish the water conservation goals to reduce water consumption by ten percent by 2015.
8. GIS Technology – Pending approval of a GIS grant, proactively target high-water-usage customers as identified for pertinent conservation information and potential water and money savings advice (see also landscape water meter recommendation).

Background:

GIS Technology

The City recently applied for a grant that will develop a Geographic Information Systems (GIS) application analyzing and mapping irrigated landscape in support of water conservation efforts. This project application will provide an analysis and reports of irrigation areas of both commercial and residential customers and map which service area customers generate high water usage per property. The system will allow the city to better monitor the effectiveness of its water conservation programs.

Water conservation measures enacted by the Water and Power Department include the following:

1. Water Survey Programs for Single-Family Residential & Multi-Family Residential Units: Surveying the inside of homes allows the City to check for leaks and identify opportunities for the installation of low flow devices within the residence. To date, over 17,000 surveys have been completed. Surveying the outside of homes allows

the City to examine customer irrigation schedule practices to determine any changes that could lead to increased water savings.

2. Residential Plumbing Retrofit: The City has adopted an ordinance which prohibits the sale of showerheads that are not considered low flow devices. The City has supported this effort by distributing over 14,000 low flow showerheads. In addition to low flow showerheads, the City has distributed over 2,500 faucet aerators and 1,200 flappers to residential customers.
3. System Water Audits, Leak Detection & Repair: The City conducts annual audits by comparing metered sales with total supply entering the system.
4. Metering with Commodity Rates: The City requires all new connections and retrofits to be metered resulting in the identification of wasteful practices.
5. Large Landscape Conservation Programs & Incentives: Focusing on larger commercial, industrial & institutional customers, the City promotes awareness of water savings, provides conservation devices, and offers a pilot program for installation of water saving Weather Based Irrigation Controllers (WBICs) for commercial customers.
6. High Efficiency Washing Machine Rebate Programs: The City offers rebates to customers who purchase High Efficiency Washing Machines.
7. Public Information Programs: The City provides up-to-date information on water conservation issues and practices through advertising, public service announcements, newsletters, media events, landscape classes & public speaking opportunities.
8. School Education Programs: Information is presented to school age children at various events; operating on the premise that children who are aware of saving water grow up to be water saving adults.
9. Conservation Programs for Commercial, Industrial & Institutional (CII) Accounts: The City has surveyed most of the CII accounts; evaluating and giving recommendations for water saving devices and practices; and offering educational and informational opportunities.
10. Conservation Pricing: The City charges customers for water use by volume. It utilizes a pricing structure that increases the price per unit of water at higher levels of water use.
11. Conservation Coordinator: The City's Conservation Coordinator is a certified Water Conservation Practitioner through the American Water Works Association (AWWA).

12. Water Waste Prohibition: The City prohibits water wasting during times of declared water shortages under Chapter 13.10 of the City of Pasadena's Municipal Code.
13. Residential Ultra Low Flow Toilet Replacement Programs: Through an existing co-sponsored agreement with Metropolitan Water District of Southern California, the City is providing rebates to residential water customers who purchase and install Ultra Low Flow Toilets.
14. Install Green: This newly implemented program is a collaborative effort wherein Water and Power supplies water saving devices for residential application and MASH crews install the devices.

UNITED NATIONS 2005 URBAN ENVIRONMENTAL ACCORDS

ACTION 20 - WATER SOURCE

Action: Protect the ecological integrity of the City's primary drinking water sources (i.e. aquifers, rivers, lakes, wetlands and associated ecosystems).

Status: Likely - Recommendations

Comments:

The City of Pasadena obtains water from two sources, groundwater and imported water. Water supply consists of 40% groundwater and 60% imported water, although the exact proportion may vary from year to year.

Recommendations:

1. Water Treatment – Proceed with the construction of a perchlorate water treatment plant near the City's Corporate Yards.
2. Hahamongna Watershed – Implement all of the Hahamongna Watershed Park recommendations that apply to groundwater recharge and water quality.

Background:

Groundwater

Groundwater production is obtained from the Raymond Basin (Basin) aquifer that underlies the City and surrounding region. There is a legal agreement that governs the withdrawal of groundwater from the Basin with Pasadena having groundwater pumping rights and rights to percolating surface water during spreading operations. The City can also utilize the Basin for long-term supply storage. The City manages these components of supply and storage within the Basin to maximize groundwater production, thereby, reducing its dependence on imported water.

In the Basin, groundwater quality has been impacted by a variety of chemical contaminants including volatile organic compounds (VOCs), perchlorate and nitrate. VOCs are man-made compounds that are commonly used as solvents, degreasers and dry-cleaning agents. Perchlorate is used as a component in rocket fuel and fertilizer. Nitrates can come from a variety of sources including fertilizer, landfills and septic tanks. All of these compounds can have negative health impacts and all have maximum contaminant levels that have been set by the Environmental Protection Agency with the exception of perchlorate, which currently has a notification level set by the California Department of Health Services. The City and other agencies have modeled and studied the groundwater and contamination movement in the basin. A new water treatment plant is currently being designed to treat VOCs and perchlorate in the Basin.

This treatment plant is scheduled to be online by Fall of 2007. A second treatment plant is currently being contemplated and may be online in the near future near the City's Corporate Yards for the treatment of perchlorate. These water treatment plants should remove the contamination from the groundwater allowing for clean drinking water for future generations.

Along with the City's annual pumping water rights, the City also diverts surface water runoff from two streams and spreads the water in spreading basins where it percolates into the ground. By doing so, the City acquires spreading credits which can then be used to pump groundwater at a later time.

The two streams flowing through Pasadena are the Arroyo Seco Stream and the Eaton Canyon Stream. The watershed land for both streams is owned by either the City or the National Forest Service. Ownership allows the stream channels to remain in a natural and undisturbed environment. Only passive recreation is allowed in these watersheds.

To further protect the natural stream channels at the mouth of the Arroyo Seco Canyon the City is creating the Hahamongna Watershed Park and at the mouth of Eaton Canyon is the Eaton Canyon Nature Center park area. These parks create a natural setting where the stream water can percolate into the ground, thereby replenishing the groundwater without contamination and other man-made influences.

The City participates in "Household Hazardous Waste Roundups" to help residents safely dispose of household chemicals like paints, oils, and weed killers. These waste roundups reduce illegal dumping of chemicals that could eventually seep into the groundwater. The City is also initiating an E-Waste disposal program to divert electronic devices with hazardous materials from entering landfills (see Action 5).

The City enforces the National Pollutant Discharge Elimination System (NPDES) Phase II requirements that cover most commercial and residential development and construction sites. As authorized by the Clean Water Act, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into "waters of the United States." For the City, enforcement of the NPDES requirements reduces pollutants from entering the City streams and percolating into the groundwater.

Imported Water

The remaining water supply for the City is purchased from the Metropolitan Water District of Southern California; a regional wholesaler of imported surface water. This water is a blend of Colorado River water delivered through the Colorado River Aqueduct and surface water from the Sacramento-San Joaquin Delta in Northern California, delivered through the State of California Water Project Aqueduct. The City of Pasadena is actively involved with the Metropolitan Water District in assuring that the City's imported water supply is safe and potable. The City supports both the Federal and State activities to protect the ecological integrity of the Colorado River and the Sacramento-San Joaquin Delta.

UNITED NATIONS 2005 URBAN ENVIRONMENTAL ACCORDS

ACTION 21 - WASTEWATER

Action: Adopt municipal wastewater management guidelines and reduce by 10% the volume of untreated wastewater discharges by 2012 through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participants of all affected communities and is based on sound economic, social and environmental principles.

Status: Achieved - Reduce Untreated Wastewater Discharges
Likely - Use of Recycled Water
Achieved - Sustainable Urban Watershed Planning Process

Comments:

All of the City's sewage wastewater is treated by the Los Angeles County Sanitation District, which serves 78 cities in Los Angeles County as part of a confederation of independent special districts.

The City has put great effort into making the maximum use of recycled water in its service area a possibility, and has secured a source of reclaimed water. In the process of contacting potential users, the City has encouraged and promoted the use of recycled water. The only real obstacle at the present time is the lack of funding. As resources become available, the City will be in a position to ramp up quickly towards implementation of its recycled water system plans.

The City has been actively involved in a sustainable urban watershed planning process for the Arroyo Seco Watershed. However, the City has not been as actively involved with the watershed planning process for the Eaton Canyon watershed.

Recommendations:

1. Water Conserving Fixtures – Through rebates continue to encourage the use of waterless urinals, low flow toilets, and other water conserving fixtures to decrease the volume of wastewater for treatment.
2. Recycled Water Funding – Create a funding plan to implement the use of recycled water in the City of Pasadena.
3. Eaton Canyon Preservation – Proactively engage in planning efforts with Los Angeles County for the Eaton Canyon watershed preservation, naturalization and groundwater recharge.

Background:

Wastewater Treatment

Even though the City treats all wastewater, the City has taken steps to decrease the volume of wastewater for treatment by encouraging water conservation such as waterless urinals, low flow toilets, and other water conserving fixtures.

Recycled Water

Although the City does not have its own wastewater treatment plant, the City views recycled water as a viable water supply source and effective way to reduce the future need for imported water. In 1991, the City studied the possibility of bringing recycled water to the Pasadena area from two sources: Los Angeles/Glendale Water Reclamation Plant (LAGWRP) in the Los Angeles and Whittier Narrows/San Jose Creek Wastewater Treatment Plants near Whittier. An economic feasibility study was conducted by comparing the two alternatives. Based upon the study, it was determined that it would be more economical to bring reclaimed water from LAGWRP.

In 1993, Pasadena and Glendale signed the Reclaimed Water System Participation Agreement. This contract entitled the City to 6,000 AFY of recycled water at an instantaneous maximum rate of 6,255 gallons per minute and defined LAGWRP as the source of this water. The contract terminates on December 31, 2017; however, the City has the right to extend the agreement terms for an additional 25 years.

Urban Watershed Planning Process

The two streams flowing into Pasadena are the Arroyo Seco Stream and the Eaton Canyon Stream. The watershed land for both streams is owned by either Pasadena or the National Forest Service. Ownership allows the stream channels to remain in a natural and undisturbed environment. Only passive recreation is allowed in these watersheds.

The City has been actively involved in a sustainable urban watershed planning process for the Arroyo Seco Watershed. The City is a member of the Council of Arroyo Seco Agencies that is working to protect the Arroyo Seco watershed. The Council also coordinates activity near the Arroyo Seco Stream. To further protect the natural stream channel at the mouth of the Arroyo Seco Canyon, the City has created the Hahamongna Watershed Park.

However, the City has not been as actively involved with the watershed planning process for the Eaton Canyon watershed. The Los Angeles County currently provides oversight of Eaton Canyon stream and watershed activities. Through a more coordinated effort, greater watershed preservation, naturalization and groundwater recharge could be accomplished.