

TO: HONORABLE CITY COUNCIL

FROM: CITY MANAGER DEPARTMENT: City Manager's Office

DATE: APRIL 11, 2011 Staff Report: 1508

REPORT TYPE: STUDY SESSION

SUBJECT: Update on City Sustainability and Environmental Initiatives Including a Report from the Community Environmental Action Partnership (CEAP) and Study Session on Existing Building Energy Efficiency

SUMMARY

The following report updates information regarding the City's sustainability and environmental initiatives brought to Council on April 19, 2010 (CMR 200:10) and outlines a study session topic which will be discussed the council meeting on April 11th, 2011. The study session topic is on improving existing building energy efficiency and how to implement a program to monitor and increase energy efficiency in commercial buildings in Palo Alto.

BACKGROUND

This report highlights only a portion of the many sustainability programs listed in the comprehensive inventory in Attachment 1. This inventory is broken down into seven categories, similar to this report and divided again by what we need to do by laws and mandates, what the City and other regional organizations are doing, and what programs are offered to residential and commercial customers in Palo Alto. Staff reports that there is continued community support of many sustainability programs, despite the economic slowdown. Staff feels that the near term goals of the Climate Protection Plan developed in 2007 are feasible, although the long term goals may be more difficult to reach given the upcoming development projects. Much of the success in reaching these goals is due to the increase rate of renewable energy in our portfolio, rather than a load reduction. Staff will continue to reach out to community organization and the new emerging

technology and piloting program has the potential for more tangible engagement with a wider group of residents and businesses

Our partnership with Stanford research projects continues to be strong, and has included a series of collaborations with the Public Works department on wastewater treatment and reuse of resources contained in wastewater. The Utilities department is working with a Stanford research staff and student on a pilot demand response program in the community. City staff have also guided several Stanford student groups in validating their ideas for innovative clean tech related products and services. A number of departments also have hired interns at various times of the year on important projects such as the Green House Gas inventory reports.

The report is structured to provide an update on the following topics:

- A. Climate Change and Adaptation
- B. Energy Supply and Conservation
- C. Water Conservation and Resource Management
- D. Natural Environment
- E. Waste and Materials
- F. Built Environment
- G. Transportation.

DISCUSSION

A. Climate Change and Adaptation:

Climate Protection Plan and GHG Monitoring (Debra van Duynhoven/ Shiva Swaminathan)

In December 2007 (CMR: 435:07), Council approved a Climate Protection Plan (CPP) that set short, medium, and long term goals to reduce municipal operations and community greenhouse gas (GHG) emissions. The plan is summarized in Attachment 2. The City's long term goals were in line with California's goals under the Global Warming Solutions Act of 2006 (AB32). Since the adoption of the City's CPP in December 2007 and AB32 adoption in September 2006, the City and City of Palo Alto Utilities (CPAU) have undertaken many initiatives to reduce the community's carbon foot print and better position CPAU to operate under the new AB32 related regulation expected to be implemented in 2012. Unfortunately, federal climate change regulations are stalled and not expected to progress in the next two years. U.S Environmental Protection Agency (USEPA) efforts to regulate GHG emissions and the ramifications of such regulations for AB32 are unclear at this time.

National protocols are currently being developed for both municipal operations and community emissions. For instance, the community protocol that is being developed by ICLEI (Local Governments for a Sustainable USA) includes many more data points than our CPP. The draft protocol currently includes between 40-50 data points in different categories, such as the Built Environment, Transportation, Energy Use, Land Use, Material Consumption, Solid Waste, and Wastewater, in an effort to present a complete, well-rounded picture and to better enable benchmarking for and between cities. Once

such protocols are established in the coming months, staff will be evaluated to see if a recalibration of the original emissions calculation in the CPP from 2007 is necessary.

The municipal operations numbers have been verified by California Climate Action Registry (CCAR) and they meet the standards of our General Reporting Protocol Version 3.1 and for completing this effort, we were granted the status of *Climate Action Leader*. In January 2011, the City and CPAU have signed on to the Climate Registry (TCR), which will be replacing CCAR for public reporting.

Due to the success in meeting and exceeding our municipal goals set for 2009, in April 2010 at staff's recommendation, Council set a more ambitious target of reducing municipal emissions by 20% below the 2005 baseline by 2012. Waste reduction, employee commute programs, alternate fuel vehicles, efficiency measures and the major upgrades in our buildings and the water quality treatment plant are expected to be key drivers in meeting the new 2012 goal. Staff believes we will meet and potentially exceed this new municipal operation emissions goal for 2012.

Staff believes that 2012 community goals are achievable with continued community engagement support of our many sustainability programs. However, if a recalibration of our emissions is completed, as required by new protocol requirements, a reassessment of our goals may be necessary. Although our 2020 goals are far away, Staff believes these may be more difficult to reach given upcoming developmental projects.

Community Environmental Action Partnership (Debra van Duynhoven)

The Community Environmental Action Partnership, a collaborative citywide initiative, engages the various segments of the Palo Alto community to identify opportunities and create and implement sustainable environmental solutions. CEAP Committee includes segment liaisons who meet every month at Lucie Stern Community Center. The different segments include City Government, Business Community, Nonprofits, Neighborhoods, School Community, Faith Community, Stanford, and Medical Community. Each segment takes on projects which the committee as a whole supports in various ways. Attachment 4 is the complete report from each segment describing the various events and highlights from 2010. In addition, there definitely is opportunity for more volunteers to join, particularly in the medical, non-profit and faith segments. Please contact debra.vanduyhoven@cityofpaloalto.org, if you are interested in participating in CEAP.

PaloAltoGreen Program Update (Joyce Kinnear)

The PaloAltoGreen renewable rate option remains stable with participation staying at around 21% of electric customers participating in the program. By far the majority of participants are residential. While the program remains the top program in the country by percentage of participation, participation has leveled primarily due to what appears to be the impacts of the downturn in the economy reducing the numbers of customers who wish to take on an added expense and to the difficulty at reaching to the next segment of customers, beyond those that are most strongly interested in green issues and renewable energy. The program participants collectively subscribed for 71,334 MWh of renewable energy credits (RECs) through the program in 2010; this generation is estimated to have

displaced 38,775 tonnes of CO₂ in 2010. The municipal operations subscribed for 8,988 MWh of RECs or 12% of the total amount purchased.

Utilities Renewable Energy Supply (Jane Ratchye)

In May 2010, Council approved new contracts for renewable energy supplies from two landfill-gas-to-energy projects. These projects are expected to begin operations in 2013. In late 2011, the Council is expected to consider another renewable energy contract from a geothermal project, which is expected to begin operating in late 2012. After these latest additions to the portfolio, renewable energy will provide over 30% of the City's total electricity needs by 2013. Increased renewable energy supply is a primary strategy in reducing the communities GHG emissions.

B. Energy Supply and Conservation:

Gas Utility Long-term Plan (GULP) (Jane Ratchye)

Utilities staff has worked with the Utilities Advisory Commission (UAC) since June 2010 to revise the Gas Utility Long-term Plan (GULP). The GULP address activities related to long-term (10 to 20 years) gas resource acquisition and management including implementation of related Council policies. Two GULP strategies are specifically related to the Council priority of Environmental Sustainability. One is directed at maximizing the efficiency of gas usage in the City. The strategy requires using a reasonable carbon adder to calculate cost-effectiveness so that the environmental aspect of efficiency is valued appropriately. Using a carbon adder ensures that the long-term liability of the costs of buying allowances for carbon emissions is incorporated into the investment decision for gas efficiency measures.

The other strategy is focused on climate protection and requires staff to pursue cost-effective "green" gas, when it can be purchased for the cost of "brown" gas plus an appropriate carbon adder. Currently staff is pursuing several non-fossil fuel gas opportunities through Palo Alto's Northern California Power Agency (NCPA) membership. If any cost-effective non-fossil fuel gas is available, it may be used for an extension of the PaloAltoGreen program for natural gas.

The Council GULP plan in March 2011

Long-term Electric Acquisition Plan (LEAP) (Jane Ratchye)

Staff also worked with the UAC since June 2010 on revising the Long-term Electric Acquisition Plan (LEAP) in an effort to balance environmental and economic sustainability. The LEAP addresses the functions related to the pursuit and management of electric resources and includes implementation of related Council policies and plans for energy efficiency, renewable energy, and greenhouse gas (GHG) emissions reduction.

The LEAP includes the maximization of cost-effective energy efficiency, examination of alternative ways to pursue renewable energy, and exploration of the feasibility of setting GHG emission reduction targets for the electric supply portfolio. The LEAP contains a Renewable Portfolio Standard (RPS) requiring 33% of the City's electric usage to come

from renewable energy supplies by 2015 with a rate impact of no more than 0.5 cents/kilowatt-hour. Thus, Palo Alto's RPS is more aggressive than the requirement that is expected to become state law this year—33% renewable by 2020. Although renewable supplies are more expensive than traditional “brown” supplies, the plan is to first minimize all supplies by maximizing efficient use of energy. Reducing demand saves money and reduces the need to buy renewable energy.

The Council approved the LEAP revisions in March 2011.

LED Streetlight Replacement (Jane Ratchye)

Palo Alto undertook an evaluation of alternative streetlight technologies in conjunction with the Pacific Northwest National Lab (PNNL) in summer 2009. The evaluation covered both Light Emitting Diode (LED) and induction streetlights compared to the existing High Pressure Sodium (HPS) streetlights on both residential and commercial streets. Results of the evaluation were published jointly with PNNL in June 2010. The report found that LED streetlights are more cost effective than induction and HPS streetlights based on energy and maintenance cost savings, with better illuminance performance compared to the other two streetlight technologies.

Palo Alto issued an RFQ for the purchase of 600 LED streetlight fixtures (around 10% of the City's streetlights) in September 2010 and received 20 bids. City Council approved the contract with Leotek for the purchase of the LED fixtures in November 2010. These LED fixtures will replace existing 250W HPS fixtures on El Camino Real between San Antonio Road and University Avenue and also on Alma Street between San Antonio Road and University Avenue. Installation of the LED fixtures is projected to commence beginning in April and is expected to be completed within a month.

Commercial Customer Demand Response Pilot Program (Shiva Swaminathan)

The City plans to implement a pilot program to reducing electricity usage during high-demand periods in the summer. This “Demand Response” (DR) Program is intended to limit production from inefficient and polluting electric generation resources. A DR program provides an incentive for customers to reduce their electricity usage when called on by the City. By reducing customers' electricity usage during these high-demand periods, the City's annual peak usage and purchase cost for electricity will also be reduced. The objective of the proposed two-year DR pilot program is to evaluate the cost-effectiveness and customer-appeal of DR incentives in Palo Alto. The program is expected to be launched in May 2011 and will run for two years, after which time expanding the program will be evaluated. City Hall will be a participant in this pilot program. At its February 2, 2011 meeting, the UAC voted unanimously to recommend that Council approve the DR pilot program. The Council is expected to consider the program in March 2011.

Emerging Technologies Demonstration and Piloting Program (Tommy Fehrenbach)

Between our city-owned Utility, and our community comprised of tech-savvy early adopters, we have a great opportunity for partnership with the business community. This is especially true for emerging “clean” technologies, since we can at once help attract

innovators by providing them the opportunity to test their technologies which can also help us reach our GHG reduction goals.

Interdepartmental leaders are meeting to decide how best to structure such a program, keeping in mind the potential resource and policy implications. We expect to bring our ideas to UAC and Council for support and for volunteers to help set the criteria for selection and to serve on the committee that leads the selection of partners. By late spring, we expect our formalized system will be fully operational, with our first official pilot to launch by winter.

C. Water Conservation and Resource Management:

Recycled Water Update (Phil Bobel)

Highly treated wastewater from Palo Alto's Regional Water Quality Control Plant is increasingly being used for landscape irrigation, to save precious potable water supplies for human consumption and use. Total recycled water deliveries have increased by 80 percent as the new distribution system in Mountain View's "North of Bayshore" area began its first year of operation in 2010. As more customers come online, deliveries are projected to increase almost four-fold over pre-2010 years. To prepare for more distribution systems and increased use of recycled water, Staff has been working to reduce the salinity of the water and remove the concern about its use on certain sensitive plant species. A number of key areas were identified in 2011 where salty groundwater is entering sewer lines. The Plant's major Partners: Palo Alto, Mountain View and Los Altos, have now all adopted Palo Alto's aggressive Salinity Reduction Policy and the areas found to be allowing infiltration will be fixed.

Urban Water Management Plan (UWMP) (Jane Ratchye)

The Utilities Department is in the process of updating Palo Alto's 2005 Urban Water Management Plan (UWMP). Urban Water Management Plans are prepared by California's urban water suppliers every five years to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. The UWMP must assess the reliability of water sources over a 20-year planning horizon considering normal, dry, and multiple dry years. The UWMP also provides a historical perspective for many of the numerous water supply and demand decisions that have been made over the years. Finally, the 2010 UWMP will contain the draft plan for the City of Palo Alto to meet its 20% water savings by 2020 obligations as outlined in state law (SB 7x) and reviewed by Council last April in CMR 212:10.

Stormwater Rebate Program (Joe Teresi)

The Storm Drain Utility has offered a Stormwater Rebate Program to residents and businesses since 2008, providing financial incentives up to \$1,000 (residential)/\$10,000 (commercial) for measures that reduce stormwater runoff. Eligible measures include rain barrels, rainwater cisterns, permeable pavement, and green roofs. In addition to stormwater runoff reduction, some of these measures have supplementary sustainability benefits such as reduction in the use of potable water for landscape irrigation, reduction in the heat island effect of hardscape, and energy savings from reduced heating/cooling

costs due to enhanced roof insulation. The stormwater rebates are available to all CPAU customers.

Since 2008, rebates have been issued for 82 rain barrels and 28,500 square feet of pervious pavement. In 2011, the first rebate was issued for a green roof. The green roof was implemented on a new single-family residence, which was planted in sections with several various plant palettes. The roof garden is irrigated with an automatic drip irrigation system, but the irrigation may be able to be reduced or curtailed once the plants have become established. The green roof also increases the insulation rating of the roof and reduces the heat island effect of the house compared to a building with a conventional roof.

D. Natural Environment:

Urban Forest Master Plan (Gloria Humble)

The Urban Forest Master Plan is an important component of the City's sustainable development goals. Preserving and protecting the urban forest is a long held tradition in Palo Alto. In recent decades, however, new and/or increased pressures associated with development and the provisions of services have introduced unprecedented competition for the protection of trees. The urban forest is also an element of the City's infrastructure and requires management and maintenance as an asset valued for its environmental, aesthetic and economic benefits: energy conservation, air quality improvement, CO2 reduction, storm-water control, and enhanced property values.

The Urban Forest Master Plan, partially funded by a grant from CALFIRE, is intended to provide a strategic plan to help the City conserve and renew its urban forest, to establish procedures and protocols to enhance the effectiveness of City operations and maintenance, and to provide for consistent and effective monitoring of the urban forest.

Preparation of the Urban Forest Master Plan began in December 2010, when the City contracted with Hort Science, Inc. to work with a staff interdisciplinary team. In January, the team conducted a successful online survey to which 650 people responded. During January and February, the team interviewed over 100 staff members from all relevant departments. On February 7, 2011, the consultant introduced the project to the City Council at a Study Session. Future public meetings and hearings will be scheduled in June and July to accommodate review of the draft plan and adoption by the City Council.

Farm Shop Downtown Farmer's Market (Debra van Duynhoven)

In April 2009, the FarmShop at King Plaza (in front of City Hall) was launched with Capay Valley Growers. The City Manager's Report 405:09, from October 19th, 2009 described the results of the pilot program and some of the challenges faced during the pilot program. The original intent of this pilot program was to provide local, organic produce for the community and City employees, which is in line with the City's overall goal of sustainability.

Primarily, staff found that the King Plaza location did not drive enough foot traffic to establish a self-sustaining market. Council was also concerned about the market management costs for the pilot program and directed staff to find an alternative solution or a volunteer to fill such a role. As a result the FarmShop Board moved the FarmShop

to the newly renovated Lytton Plaza, found a volunteer market manager and a community group, Palo Alto Institute, who offered to become the fiscal support of the market. Unfortunately, the market has not flourished and the FarmShop Board is considering alternative locations or times.

Bixby Park opening (Ron Arp)

Another 46 acres of closed landfill will be added to the 29 acres already open to the public at Byxbee Park this summer. The two sections of closed landfill that will be accessed are designated Phase IIA (closed in 1992) and Phase IIB (closed in 2000). Work is now underway that will prepare these areas for public access including importing and grading clean soil to repair low areas (settlement), undergrounding utility pipes and seeding the area with native grasses. The fence line between Byxbee Park and Phases IIA and IIB will be removed by July 1, 2011.

Although funding is still needed for other amenities (such as improved trails, viewing platforms, hillocks and benches), opening the area to the public is a key first step. Another 51 acres will be added to this park in 2013 after final closure of the last active landfill section (Phase IIC) for a combined 126 acres of pastoral park.

Pesticide Free Parks (Julie Weiss)

The City of Palo Alto is a Bay Area leader in reducing the amount and toxicity of its pesticides used in parks, open spaces and City facilities. Since 2005, total ecotoxic pesticide use has fallen 89% which is significant because ecotoxicity reduction is the primary driver of the City's Integrated Pest Management Policy and adopted Bay-Friendly Landscaping principles.

In 2010, staff experimented with designating Sarah Wallis Park in the California Avenue area as pesticide free, where no chemical controls for weeds, insects, fungi and rodents would be used. The pilot was successful and resulted in the Parks Department adding additional sites over the course of the year at: Ventura, Terman, El Palo Alto, Boulware, Hopkins, and Scott Parks. These locations join the pesticide-free facilities located at the Regional Water Quality Control Plant, Animal Services Center and three substations. With these additions, the Parks Department will have met its initial goal of having seven pesticide-free parks prior to its 2012 target date. Pesticide-free parks require more maintenance and a higher tolerance for weeds, but are safer for people and pets that use them and for local creeks which are sensitive to pesticide runoff. Staff will continue to evaluate the success of these pesticide-free parks, as well as look for other suitable locations. School fields are not sprayed and a pesticide-free buffer of 100 feet is kept around all creeks and playgrounds.

Although the City is making significant steps to reduce its pesticide use and toxicity, the single largest source of pesticide pollution in Bay Area creeks continues to come from residential applications of pesticides, especially those used for insect control. Staff continues to promote the use of less toxic pest control for residential do-it-yourselfers by looking for *Our Water, Our World* shelf tags and factsheets in local garden and hardware stores and by visiting www.ourwaterourworld.org to learn more. Staff also encourages

residents to use pest control companies that are EcoWise Certified— a rigorous Bay Area certification program that was developed by water quality and pest control professionals.

E. Waste and Materials:

Master Plan update to Water Quality Control Plant and Energy/Compost Feasibility Study (Phil Bobel).

The major components of Palo Alto's Regional Water Quality Control Plant are now 40 years old and a Long Term Facilities Plan for refurbishing and upgrading the Plant is being developed. One of the key questions is how the wastewater solids should be managed in the future. Currently, the solids are incinerated, and other options to use the energy contained in the solids are now being explored. Also underway is a companion study looking at energy utilization from yard trimming and food scraps. Council directed Staff to study all three of these organic residuals. The first study to be completed will be the Energy/Compost Feasibility Study in the fall of 2011, with the Long Range Facilities Plan for the Plant to be completed in mid 2012. The goal is to find cost effective technologies to recover energy and other resources from yard trimmings, food scraps and wastewater solids; and to determine whether new facilities should be located in Palo Alto, or elsewhere.

Zero Waste - Commercial Food Waste Roll-out report (Clay Reigel)

Commercial compostables service has been offered by the City's collection contractor, GreenWaste of Palo Alto, since July 2009. GreenWaste's outreach staff has actively targeted food waste-generating businesses (primarily restaurants) for participation in the compostables collection program. The average monthly tonnage of commercial compostables collected by GreenWaste has increased by 30% in FY11. As of January 2011, GreenWaste has collected and processed 6,382 tons of commercial compostables and is on track to meet their FY11 goal of 9,000 tons.

Report on Polystyrene and Plastics Ban (Karin North)

Local supermarkets and restaurants help reduce the amount of plastics entering creeks and the San Francisco Bay. In the past year and a half, Palo Alto restricted the use of single use plastic checkout bags at large supermarkets and expanded-polystyrene (foam) disposable food service containers at food service establishments. Plastic bags and expanded-polystyrene are readily found in local creeks, since the products are lightweight and persistent. Many local businesses embraced Palo Alto's goal of reducing litter in the environment by their early adoption of the plastic bag and expanded-polystyrene food containers restrictions. Staff confirmed that all seven of the large supermarkets stopped using single-use plastic checkout bags and that more than ninety-five percent of restaurants stopped using expanded-polystyrene (foam) disposable food containers. The restrictions helped reduce the quantity of plastic bags and expanded-polystyrene entering the natural environment, but there is still more work to be done. Therefore, in the near future staff will research broadening the plastic bag ban to include more stores and will investigate charging a fee for check-out bags.

Green Purchasing (Julie Weiss)

In 2010 the two major green purchasing accomplishments included the addition of Bay Friendly standards for landscape maintenance to parks maintenance contractors and stronger less-toxic pest management standards for the new golf course contractor. Landscape maintenance is performed by Gachina Landscaping and features several requirements for OMRI Certified organic fertilizers, increased mulching to reduce the need for weeds, and keeping leaf litter around trees and planters where appropriate to return nutrients to the soil in lieu of increasing the need for additional fertilizer. The golf course contractor, Valley Crest Golf Course Maintenance is required to use trapping for gophers and ground squirrels and various less-toxic approaches for golf course maintenance.

Green Purchasing efforts in 2011 will focus on reducing plastics from the purchasing supply chain in tandem with the City of San Jose. The two cities are co-leading the effort. The project is in the beginning stages and will be reported on in 2012. In addition, the City's office supply contract is being reviewed again with the intention of increasing recycled content and reduced-toxicity of key office products that are most used.

F. Built Environment:

Green Building Program Highlights (Kristin Parineh)

The Green Building Program will reach three years of implementation in July of 2011. Implementation highlights include the following:

- **789 permit applications** were covered by the green building program in 2010, an increase of 83% from 2009. The increase in applications may be explained by the late 2009 ordinance amendment to decrease the construction and demolition debris diversion requirements for projects over \$75,000 in valuation to \$25,000. 32% of the total number of applications were nonresidential and 68% residential.

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- **240 green buildings** have been completed or are under construction.

Sector and Certification Type	# of Green Buildings Completed	# of Green Buildings Pending Certification	# of Green Buildings Under Construction
Residential – Build It Green, Green Point Rated	26	35	125
Nonresidential – LEED Rating System (Verified by the City or USGBC)	21	12	21

- **18,325 tons (120 tons of salvage) of construction and demolition debris** were diverted from the landfill for reuse or recycling amongst 465 permits in 2010. 5,050 tons (27%) were attributed to the demolition at 3445 Alma for the future Alma Plaza and 3700 Middlefield for the Mitchell Park Library and Community Center.
- **\$219,207,217** estimated to be spent on construction of green buildings.
- **1,860,188 square feet** of green building construction.

- **> 2,122 people** live or work in a green building.
- **1,881,494 gallons of water per year** are expected to be saved over state and national baselines.
- **236,919 kWh of electricity per year** are expected to be saved over state and national baselines.
- **99,966 kBtu of gas per year** are expected to be saved over state and national baselines
- **9 commercial renovation projects** provided the City with Energy Star Portfolio Manager benchmarking reports providing valuable data on operational performance.
- **\$188,620** were collected in building permit revenue related to green building requirements (debris diversion fees totaled \$137,089 and green building fees totaled \$51,531.)
- **\$9,000** in fines were collected from 9 non-compliant projects (3 from 2009 and 6 from 2010). 6 permits were found noncompliant with waste diversion requirements resulting in an estimated 99 tons of waste not diverted from the landfill.
- Staff presented on the City's Green Building Program at the U.S. Green Building Council International Conference, Greenbuild, in Chicago and taught a class entitled "Introduction to the 2010 California Green Building Standards Code" throughout the state of California to more than 500 public agency staff and private sector professionals with CALBO (California Building Officials).

Existing Building Energy Efficiency Study Session (Kristin Parineh/Joyce Kinnear)

Over the last few months several cities throughout the country have adopted, or are in the process of adopting, energy performance audit and/or reporting requirements for existing buildings. In December 2010, staff presented Council with revisions to the City's Green Building Program that included the ability to require energy performance reviews of buildings covered under the program during their operation. Council requested that staff return in 2011 with a more formal program that includes staff resource impacts, the percentage of buildings subject to the program and the frequency of reporting data. This study session is intended to discuss the Council's interest and commitment towards an energy efficiency program for all existing buildings. Attachment 4 outlines the key issues that will be reviewed in the study session.

Sustainability and the Comprehensive Plan Amendment (Roland Rivera)

The existing Comprehensive Plan contains economic, equity and environmental policies that support the City's goal of sustainability. Many of these policies are implemented by existing programs and plans. However, some policies do not have corresponding programs or plans, and there are also City sustainability programs and plans that do not relate to existing policies in the Comprehensive Plan. The existing Comprehensive Plan

does not currently directly address important issues related to sustainability such as; local sustainable food systems, public education programs related to sustainability, LEED-ND, High Speed Rail and sea-level rise.

What and how we plan to approach Sustainability in our Comprehensive Plan -

Staff and consultant propose three ways to address Sustainability in our existing Comprehensive Plan Amendment and will work with the Planning and Transportation Commission (PTC) subcommittee reviewing the policies and programs to develop sustainability text for final review by the full PTC.

1. Review existing vision statements, goals, programs and policies to add sustainability support where appropriate and add a new definition in the glossary for "sustainability".
2. Consider additional sustainability topics not currently covered in the Comp Plan or other City policies or programs.
3. Restructure the Natural Environment Element to more comprehensively address environmental issues and current programs and policies adopted over the last 10 years. For example, new and existing goals would be developed around the major themes for this section. The new policies and programs implemented over the last several years (green building, zero waste, recycled water, climate protection plan, and renewable energy programs) would fall under these major themes and categories. The major themes and categories approach also give greater flexibility for future environmental efforts and policies.

City Facilities Energy Efficiency projects (Dennis Huebner)

City Hall was built in 1966 and most of the building systems were original to the building and needed refurbishment or replacement. A key consideration for Facilities Management was to develop modernization designs for these building systems which would provide for greater energy efficiency. Construction work on this two phase project started in the fall of 2008. During the first phase the control system that regulates the building up of carbon monoxide in the parking garage was optimized. The exhaust fans on this system received new high efficiency motors, which are now run by variable speed drives. All of the air handling units were refurbished and received new high efficiency motors. The single boiler was replaced with three higher efficient boilers, which are staged according to demand. A primary and secondary pumping system with high efficient motors for the boiler system was also installed to achieve more efficient hot water pumping. A primary and secondary pumping system with high efficient motors was also installed on the chilled water system to achieve more efficient chilled water pumping.

The second phase of the project started in the fall of 2010. During this phase of the project most of the electric reheat coils were replaced with more efficient hot water reheat coils. On each of the floors all of the variable air volume boxes were replaced so there is better air flow and temperature control. Package HVAC units that served the 8th floor were replaced with variable air volume boxes that are feed from the existing house air handling system. A lighting control system was installed for the tower floors, which will allow for on/off scheduling of lighting systems. Lastly, upon completion of the project a new HVAC Energy Management Control System will be installed to optimize all of the

mechanical systems to provide greater energy efficiency and better occupant comfort. The second phase is scheduled to be completed in the summer of 2011.

It is preliminarily estimated that the Phase 1 upgrades resulted in a 10% reduction of electricity consumption; this is equivalent to greenhouse gas reduction of 160 tons per year and will result in an annual electric bill saving of over \$33,000. A more detailed assessment, including water and natural gas savings will be formulated upon completion of the upgrades.

G. Transportation:

CNG Station Pilot Project (Keith LaHaie)

In December 2010, Public Works launched a pilot program to allow public access to CNG fuel at the City's Municipal Services Center (MSC). Customers are allowed access to the CNG dispensers between 9:00 AM and 2:00 PM, Monday through Friday. As of March 10, eight customers were participating. Public Works is currently in the process of repairing a surplus CNG compressor station at the MSC, and repurposing it to provide 24/7 public access. The dedicated public facility is expected to be operational in mid-May.

EV Strategies and Efforts (Shiva Swaminathan/ Debra van Duynhoven)

Over the past year a number of initiatives have developed to support the new and developing Electric Vehicle (EV) market. Staff is working to streamline the permit process for the installation residential EV chargers at homes and businesses. A multi-departmental team is working on two opportunities for which some funding is offered to the City to install chargers at publicly accessible locations.

The first is the Recharge America program where the city will be receiving between 3-5 Coulomb Level 2 chargers for free, provided that the City pays for the installation. Staff is targeting downtown garages for this project. Staff also reached out to the Palo Alto Unified School District to include them in this opportunity and they also will be receiving one free Coulomb Level 2 charger for the District offices at 25 Churchill Ave. This project is expected to be completed by early summer.

The second projects is sponsored by Bay area Air quality management District (BAAQMD) and the California energy Commission (CEC) from whom we have received \$36,000 and \$10,000 respectively to install 4-5 Level 3 chargers in various locations in Palo Alto. This project will be completed by the end of the year. Both projects will help Staff determine the current demand for EV chargers and will help in planning for future installations.

Long-term plans for EV initiatives included policy review, residential and commercial permitting review, and review of the opportunity to offer time-of-use (TOU) electric rates. Staff understands that this is a council priority and is related to both sustainability and economic development, as we start to brand Palo Alto as an EV friendly city.

ZipCar (Debra van Duynhoven)

Staff Report 1508
April 11, 2011

Over the past 10 months City staff worked with Stanford, ZipCar and the Sheraton to install 2 ZipCar spots in the Palo Alto Transit Center parking lot (in between the Sheraton Hotel and the CalTrain University Station). Stanford already had a successful ZipCar program with more than 26 vehicles in 12 locations and they wanted to partner with the City to expand that network. The cars became available on March 4th and immediately were reserved by both Stanford and community members. This program will allow for City staff to evaluate if there is a need to further expand this relationship.

Bike Share (Rafael Ruis)

The City of Palo Alto along with the Valley Transportation Authority (VTA) and the Cities of San Jose and Mountain View had been working on a countywide public bicycle sharing program that would have consisted of 100 bicycles throughout the Santa Clara County. In an effort to secure additional grant funding for a larger project, VTA joined a group to create a regional bicycle share program, and partnered with the Bay Area Air Quality Management District (BAAQMD), San Francisco MTA, County of San Mateo, SamTrans, and City of Redwood City to secure a \$4.29M grant from the Climate Initiatives Competitive Grant Program from the Metropolitan Transportation Commission. The City of Palo Alto is currently working with the VTA in the program and site planning of potential bike share locations.

The entire program will consist of approximately 1000 bikes, with Santa Clara County receiving approximately 400 bikes. The number of bikes that will be based in Palo Alto has yet to be determined, but is estimated at about 100 bikes. The main bike share kiosks will be based at major Caltrain stations, with satellite pods spread out within three miles of the main kiosks. The bicycle share project intends to begin operations in spring 2012.

The City of Palo Alto also has an employee bike share program with approximately 40 bikes in various city facilities. It was launched in the fall of 2009 and this program recycled the bikes that were used for the Senior Games event. Unfortunately this internal bike program is little used, and does not have defined staffing or maintenance provisions.

Employee Commute Program (Kathy Durham)

In July, 2010, the employee commute program was modified to enable benefits-eligible employees who use transit or ride in a vanpool to take full advantage of federal tax law.

The City provides an equitable 25% subsidy for their qualified commute expenses, and the remainder is covered by pre-tax salary deductions up to the federal monthly maximum of \$230. This resulted in typical savings of 52% of transit or vanpool costs, and has helped offset recent commute cost increases for these employees.

The modified program also includes a tax-free \$20 incentive for regular bike commuters, in the form of a voucher that can be used at any bike store for repairs, maintenance and equipment related to their bike commute. An evaluation of how these changes have impacted employee commute choices and the associated greenhouse gas emissions is planned for June, 2011. It will include participation statistics and an employee commute survey in conjunction with 511.org.

City employees also participated in the local “Drive Less Challenge” campaign last spring and in the regional 2010 Great Race for Clean Air Challenge last August and September. Results for the Great Race competition among employers were encouraging: A total of 88 City of Palo Alto employees registered on the Great Race web site, many of whom had not participated in the employee commute program before. These 88 employees logged in green transit, carpooling, walking and bike commute trips which saved 17.2 tons of CO2 emissions. The 511.org team and the Santa Clara County Board of Supervisors recognized both the City of Palo Alto and Facebook for achieving the highest participation among large organizations. Members of the City’s Green Team assisted with the promotion of these campaigns to encourage more employees to choose alternatives to driving solo more often.

ATTACHMENTS:

1. Environmental Sustainability Matrix
2. Summary of GHG/CPP
3. Community Environmental Action Partnership 2009 Annual Report
4. Existing Building Energy Efficiency Study Session Notes