TO:    CITY COUNCIL
ATTN:  POLICY AND SERVICES COMMITTEE
FROM:  CITY MANAGER             DEPARTMENT: PUBLIC WORKS
DATE:  MARCH 9, 2004                CMR:165:04

SUBJECT: PROPOSED NEW RECYCLING AND SOLID WASTE SERVICES

REPORT IN BRIEF

Staff recommends implementing a single stream recycling program, changing the collection of yard trimmings to a cart service, providing residents with the option of a curbside cart for garbage service and changing the collection contractor’s recycling vehicles to run on compressed natural gas as a preferable alternative fuel.

Single stream recycling will enable all residents as well as businesses and multi-family complexes to benefit from using a wheeled cart for the recycling and yard trimming services. Single stream recycling allows for the expansion of accepted materials, improves container mobility, and reduces noise and litter created from normal collection. The wheeled cart for recycling and yard trimmings will increase participation due to its convenience and the easy program guidelines containing less restrictions than the current system. Alternatives considered to the single stream recycling included the split cart system (where customers sort recycling materials into two compartments) and keeping the existing four recycling crate system.

Staff also recommends providing residents with the option to obtain a wheeled cart, collected at the curb, for their garbage service. This service would eliminate residents’ concerns of missing lids and of containers purchased at local hardware stores not meeting the required restrictions for garbage collection. The garbage cart would also eliminate privacy concerns, as well as improve container mobility and minimize collection cost.

Finally, staff recommends requiring the collection contractor to change the recycling collection vehicles to run on compressed natural gas as a preferable alternative fuel that is also approved by the California Air Resources Board’s future clean air requirements.
RECOMMENDATION
Staff requests that the Policy and Services Committee recommend to Council approval of the following:

1) Implement a single stream recycling program.

2) Change the collection of yard trimmings to cart service.

3) Supply optional curbside cart service for garbage.

4) Approve compressed natural gas as an alternative fuel for the collector’s recycling collection vehicles.

BACKGROUND
As required in the agreement with the Palo Alto Sanitation Company/Waste Management (PASCO), the City periodically performs a customer service satisfaction survey to evaluate the general satisfaction of the community with the quality of service provided by PASCO. The results from the survey conducted in 2001 showed that 96 percent of residents responding to the survey rated the PASCO service as excellent or satisfactory (CMR 364:01). The survey also provided the opportunity for residents to add comments about their service. Comments related to improving service levels included: 1) recycle additional plastics, 2) improve how containers are returned after being serviced, 3) reduce collection noise, and 4) create flexibility and simplify collection methods. As a result of this survey, a pilot program was implemented to address the concerns and needs of the public.

Currently residents have to separate curbside recycling materials into four different stationary containers and then carry them to the curb for collection by PASCO. The new-piloted service involved testing single stream recycling. Single stream recycling is the commingled collection of recyclable materials in one wheeled cart. The pilot also tested the placement of yard trimmings in a wheeled cart instead of the current system where residents place their yard trimmings into their own 32-gallon cans, which are then carried to the curb for collection.

The pilot program was implemented in October 2002 in five different locations throughout the Palo Alto community, including sections of Downtown, Crescent Park, Midtown/West Bayshore Road area, Barron Park and College Terrace. The pilot program was comprised of approximately 2500 households, with about 500 being serviced each day of the week. Each household in the pilot area received new public educational materials and was provided with two 96-gallon wheeled carts, one for the commingling of recycling materials and one for yard trimmings materials.

The 96-gallon cart size was chosen because it would accommodate all the recyclable materials placed inside the current system of four 18-gallon recycling crates. The cart
also accommodates corrugated cardboard and extra materials generated seasonally (mixed paper during the holidays, extra beverage containers during the warm summer days). Recycling materials accepted were expanded to include all plastics numbered one through seven, milk and juice cartons, and plastic bags. The 96-gallon cart for yard trimmings accommodates the normal amount of material placed for collection at the curb as well as any extra yard trimmings occasionally generated by residents.

Staff evaluated carts from five different cart manufacturers and selected the cart delivered to residents for its pricing, capacity to hold recycling materials, ease in maneuverability and compatibility with the existing PASCO collection equipment. The color of the carts was chosen after careful consideration of the colors normally associated with recycling materials and yard trimmings. For yard trimmings, the color green was selected since it is associated with the color of the materials collected. The blue color for the recycling cart was custom-made for the City of Palo Alto. The color blue is generally associated with recycling of materials. Since Palo Alto prides itself in being unique and different from other municipalities, staff wanted to continue that tradition by having the manufacturer create a custom blue color for the recycling cart.

The delivery of the carts and announcement of the pilot recycling program was well accepted, with the normal level of initial resistance to service changes. City and PASCO staff worked hard to accommodate special requests and to educate the public that residents would be given the opportunity to evaluate the service and help determine whether to continue and expand the piloted service citywide. Within a month, residents initially rejecting the idea of change began to enjoy the benefits of single stream recycling.

The recycling materials are collected at the curb and taken to a processing facility where both people and machinery with advanced technology separate the recyclable material. The sorted materials are then marketed to material brokers or manufacturers. According to PASCO’s/Waste Management market analysts, the majority of the material including paper is sold to markets in Asia. Some materials such as some plastic, tin and glass are sold to markets within the United States.

**DISCUSSION**
A survey of the piloted area was conducted in March 2003 to assess residents’ response to the new system of single stream recycling and yard trimmings using wheel carts. The survey included questions about their preference of container, the size of the carts issued during the pilot, color of the cart and collection changes noticed during the pilot. Staff received 1,279 responses for a 55 percent return rate. When asked the question, “Do you prefer the cart instead of the crates?” 93 percent of the survey respondents preferred the cart, with 4 percent disagreeing with the statement. The survey responses also showed that the size of the recycling cart issued at the beginning of the pilot was adequate for 59 percent of the participants, while 32 percent preferred a mid-size cart (64-gallon) and 7 percent preferred a smaller 32-gallon cart. For yard trimmings, 68 percent of the survey
participants preferred the larger 96-gallon container, while 25 percent preferred the smaller containers. In the survey, 86 percent of the respondents liked the custom blue color for the recycling carts, 4 percent did not like the color, and 9 percent had no opinion. The survey results for the color of the yard trimmings cart were similar in that 85 percent liked the color, 1 percent did not like it and 9 percent did not have an opinion. While some survey responses expressed the concern about the lack of sorting and a change in their recycling habits, most residents welcomed the ease and convenience of the single-sort system.

**Single Stream Recycling**

Staff recommends expanding the piloted single stream recycling program to the entire city. Single stream recycling has many advantages. It saves people time from having to sort recyclables into the current four-crate system and carry each material type to the curb. Collection carts have attached lids and wheels. This improves cart mobility and reduces noise and litter created from the collection program. It allows the Recycling Program to expand the types of materials accepted. It changes the design of the collection trucks to single compartment bodies. This reduces the number of collection vehicles needed to collect materials, reduces noise levels in neighborhoods, reduces street wear, reduces collection cost and allows the ability to utilize full truck capacities. The semi-automated collection of the cart instead of the current manual collection of crates results in reduced worker injuries and in the future will reduce the collector’s insurance costs.

Single stream recycling in wheeled carts has proven to be a successful service for the Palo Alto residents participating in the pilot program. Single stream recycling is also a service that has become the trend in many communities throughout the nation due to its convenience to the customer and the technological improvements that have been made in the sorting systems. City and PASCO staff believes that single stream recycling will increase participation and tonnage due to its convenience in using the wheeled cart and of the easy program guidelines containing less restrictions than the current system. Based on the results from the piloted area, PASCO projects an increase of 10 percent in curbside recycling tonnage and 35 percent increase in curbside yard trimmings tonnage if services are expanded citywide to residents.

**Collection Containers**

With the expansion of single stream recycling citywide, residents would be given the choice of pre-selecting their recycling cart size (32, 64 & 96 gallon). The default cart size for those residents that do not make a cart selection would be a 96-gallon cart. This is based on the responses from the pilot survey where the majority (59 percent) of respondents preferred the larger 96-gallon cart for recycling. The carts used for single stream recycling will alleviate some of the container placement issues mentioned in the PASCO survey by reducing the number of containers placed at the curb for service. Residents will be given the option to keep and reuse their existing crates or the crates will be collected and recycled.
Processing
The goal for the City’s solid waste management services is to have Palo Alto’s materials serviced within the community instead of having to transport materials to other jurisdictions. However, the current Palo Alto Recycling Center is not equipped nor does it have the space to process the commingled mixture of recyclables. With single stream recycling, PASCO would transport the material to another Waste Management materials recovery facility for processing. The proposed processing facilities are the Davis Street Transfer Station located in Oakland or the Waste Management Castroville Processing Center via the transfer station in San Jose. The additional travel time to deliver the recycling materials to Oakland or Castroville would offset any time saved during the collection time. Since all the recycling is placed in one container, there is an increase in processing costs and degradation to some of the marketable items. This results in PASCO receiving a lower cost per ton for the materials marketed. PASCO currently receives approximately $71 per ton for an average of 14,500 tons of material recycled annually. PASCO projects to receive only $15 to $20 per ton for the single stream material, resulting in a loss of revenue of approximately $740,000 on an annual basis. It is estimated that the increase in participation will lead to an additional 1,450 tons of materials to be recycled, which will offset some of the revenue loss by approximately $30,000.

Single stream may also increase the amount of residue, which PASCO estimates to be between 3 and 12 percent. The residue is a result of people placing items inside the container that are not recyclable. Staff plans to try to control the residue rate by providing extensive educational outreach on what can be recycled. PASCO will also use its non-collection notices to inform customers of items which are not recyclable. As a way to prevent high levels of residue, staff recommends not extending the piloted curbside collection of milk and juice cartons or plastic bags due to the poor plastic recycling markets and the inability of processors to guarantee that all materials will be recycled and not disposed as residue at the end of the sorting process.

As a result of sending the recycling materials to another community for processing, PASCO would no longer operate the processing of recyclables at the local Recycling Center. The public drop-off center would remain open and would continue to accept all the current recycling items including those not collected curbside such as milk and juice cartons, polystyrene, and plastic bags.

Expanding Recycling for Multi-Family Complexes, Businesses and Schools
Staff recommends extending the single stream program to multi-family complexes, businesses and schools. The current service involves the collection of materials separated in multiple containers including: 1) office pak (a mixture of white and mixed paper), 2) newspapers, 3) bottles and cans, and 4) cardboard. Allowing these sectors to mix paper, bottles and cans would increase participation and tonnage due to the convenience and less restrictive recycling guidelines involved in single stream recycling. Since the majority of
cardboard from these sectors is oversized and is best placed in large containers, staff recommends continuing the current cardboard service.

The change in service would involve collecting the existing carts and exchanging them for the new single stream recycling carts that would resemble those issued to residents. All recycling carts would then be standardized (by color, size and manufacturer) throughout the city and could be serviced by any of the collection trucks.

**Carts for Yard Trimmings Collection**

Staff recommends changing the collection of yard trimmings to cart service. Collecting yard trimmings in wheeled carts means that the cart would be more convenient and easier to wheel to the curb than carrying multiple 32-gallon cans full of yard trimmings. The carts would provide a clean and uniform appearance, as well as improve the aesthetics of the streets on collection days due to the containment of the yard trimmings. PASCO would create designated routes for the collection of yard trimmings, resulting in more efficient use of the truck space and fewer trips to the composting site at the landfill. Under this program, residents would be given the option of obtaining one 96-gallon cart at no charge. The 96-gallon cart would accommodate the same amount of material as three of the currently allowed 32-gallon cans. Smaller sized carts (32 and 64-gallon) would also be available. Residents regularly generating more yard trimmings and needing more than one cart would have the option of renting or purchasing additional carts.

The processing of the yard trimmings would continue to occur at the composting site in the City’s landfill.

**Optional Curbside Cart Service For Garbage**

Staff recommends continuing the backyard garbage collection service, in addition to offering residents a choice of obtaining a wheeled cart and placing it at the curb for their garbage collection. PASCO currently provides backyard garbage collection to residents with can service. This allows residents to leave the cans in a convenient location on their private property and for a PASCO driver to enter the backyard to empty the containers on collection day. Over the years, staff has obtained feedback from residents that 32-gallon cans are becoming more difficult to obtain through the local hardware stores. The containers sold are generally larger and over the size limit required for garbage service. Many of these new containers purchased by residents are also not compatible with the PASCO equipment. By having PASCO provide the optional wheeled cart for garbage, it ensures that the cart will be compatible with the collection equipment used and the weight limit guidelines. The cart service would also eliminate some of the concerns residents mentioned in a recent PASCO customer service survey of lids not being returned to the container, which is a problem that rises during rainy and windy days.

With this option, residents would be provided a wheeled cart at no cost for the collection of their garbage. Those residents wanting a cart for their garbage would be provided the
choice of cart sizes that would equal the current service rate structure. The smallest size available is a 20-gallon, which is the same capacity as the mini can currently used by some residents. This cart would be a 32-gallon cart with a 20-gallon insert allowing only 20 gallons of trash to be placed inside the cart. Other cart sizes would include 32-gallon, 64-gallon and 96-gallon. The 96-gallon would be equivalent to the current three cans (each at 32-gallons) used by some residents.

By choosing the cart option for garbage collection, residents would be required to place their carts at curbside for collection. Curbside collection would help maintain the cost of providing the cart collection service by allowing PASCO to maintain its efficiency in emptying the carts. Similar to the recycling carts, by placing the garbage carts at the curb, PASCO would be able to drive up to the carts. The driver would place the cart on a lifting mechanism, which would then empty the cart without moving it far from its original location.

No rate incentive was proposed to residents who elect to put their own carts at curbside because the collection labor saved would be used towards the City yard trimming collection program, in anticipation of the increased amount of participation in that program.

Education
PASCO would need to hire three additional temporary customer service representatives for approximately six months prior and during the start-up of the new services to handle the expected increase in customer telephone calls and administrative work.

City staff will develop all the educational outreach materials to educate the Palo Alto community, including residents, businesses and schools, on the future service changes. This will include developing a postcard to send residents requesting that they pre-select the size of their recycling and yard trimmings cart as well as offering the option of a garbage cart for curbside collection. Brochures with new recycling guidelines will be developed and distributed to all customers. Newspaper advertisements will be placed in the local newspapers. In addition, staff will work with business, home and neighborhood associations as well as the local media to inform the community about changes to their services.

Collection Vehicles & Alternative Fuels
Staff recommends switching the new PASCO recycling collection vehicles to compressed natural gas (CNG).

The City requested that PASCO research the possibility of using alternative fuels to improve air quality and to comply with upcoming mandates by the California Air Resources Board (CARB). PASCO switched to using biodiesel (B-20) as a fuel alternative in its vehicles in July 2002, helping to reduce air emissions during collection.
However, it is uncertain at this time if using B-20 would meet future requirements by the CARB.

Air pollution reductions can be made by switching the vehicles to operate on another preferable alternative fuel such as CNG. Since four of the PASCO recycling trucks are due for replacement during FY 2004-05 and two vehicles are scheduled for replacement the following fiscal year, the City and PASCO have an opportunity to obtain trucks that operate on CNG to meet the CARB requirements. Each collection vehicle with the CNG fuel engine would cost an additional $50,000. The added cost would be included in the FY 2004-05 budgeted PASCO depreciation costs. PASCO plans to fuel these vehicles at the City’s new CNG fueling station. The City’s Public Works Department/Refuse Fund would absorb the cost of the fuel (see Attachment A). Using CNG would require PASCO to retrofit its maintenance shop at a cost of approximately $100,000, budgeted through the PASCO budget. The retrofit includes installing gas detectors, required ventilation, and spark prevention improvements as well as upgrading the shop’s heating and electrical system. Maintenance and labor costs associated with CNG are estimated to increase approximately 15 percent, which would also be budgeted through the normal PASCO budget process.

**Alternative I: Split Cart System**

As an alternative to single stream recycling, staff considered the split cart system. Instead of commingling all of the recyclables into one wheeled cart as the case of the single stream recycling, residents would sort their materials into two categories. Paper (mixed paper, newspaper and smaller pieces of cardboard) would be placed in one side of the cart and the rest of the accepted materials (glass, plastic bottles, and cans) would go in the second partition of the cart. The type of materials accepted would also be expanded to include all plastics numbered 3 through 7.

This program would be similar to the direction that the cities of Sunnyvale and Mountain View are taking their recycling programs, and it would allow the City to take the materials from the split cart to the SMaRT Station in Sunnyvale for processing. The SMaRT Station is currently processing materials from the split cart service used in the City of Sunnyvale and is gearing up to take the recycling materials from Mountain View. The potential for PASCO to reduce employee injuries and worker’s insurance costs would also be realized since the semi-automated lifting of the carts would be used instead of the crates that are currently collected manually.

While the split cart would be an improvement over the current four-crate system, and residents could save time in separating recyclable materials and the labor from carrying the various crates to the curb, there are a number of disadvantages.

Costs for the divided carts are 93 percent more than the carts for single stream recycling (see Attachment A). There are more components to a split cart, increasing the potential of having a higher rate of repair and maintenance costs. The split cart can lead to the
contamination of the materials when residents run out of space on one side of the cart and use the available space on the other side of the cart partition. This contamination would also lead to a higher amount of residue. The split cart would require trucks with a split body, which may affect the collection efficiency since if one side of the truck fills up faster than the other, the PASCO driver might have to make an extra trip to the SMaRT Station to unload the truck before continuing to finish the route.

With the split cart option, residents would be given the opportunity to pre-select the size of their cart; however, the options would be either a 64-gallon or a 96-gallon cart with a divider in the middle of the cart. Due to the nature of the divided cart, the 64-gallon cart is the smallest size available. Unfortunately, this size would be too large for some residents in Palo Alto.

With the split cart system, PASCO would still need to hire three additional temporary customer service representatives for approximately six months prior and during the start-up of the new services to handle the expected increase in customer telephone calls and administrative work. City staff would develop the same educational outreach materials as single stream recycling to educate the Palo Alto community, including residents, businesses and schools, on the service changes.

**Alternative II: Continuing with Existing Four Recycling Crates**

The second alternative to single stream recycling would be to continue with the existing four-crate system. This option involves expanding the type of materials accepted for curbside collection and requesting that residents keep their existing four recycling crates. Residents would continue to sort their recycling materials into the four crates separating mixed paper, newspaper, plastic containers, glass bottles and cans. Cardboard would continue to have to be flattened, folded to the required size and placed next to the recycling crates. City staff would prepare outreach materials to educate the community on the expanded list of accepted plastics and residents would be able to add them to their existing crates. Any overflow of materials would be accommodated in a paper bag placed next to the crate at the curb.

Keeping the existing crate system means residents will continue to have to sort their materials into the four individual containers and will need to adhere to the current sorting restrictions. Since the crate system began in 1994, many of the existing crates are due for replacement at an estimated cost of $384,000 including the cost to collect the old crates to be recycled. (See Attachment A).

This option would not have a significant impact on the PASCO operation or processing. The processing and marketing of the recycling materials would continue to be done at the Palo Alto Recycling Center with minimum impacts to the operation.
Implementation Timeline of New Services
The projected implementation date for the new services is July 1, 2005. This is based on having approximately one year from the time Council approves the implementation of the new services and the new budget. This would provide the City and PASCO time to 1) order the new collection vehicles, 2) order and assemble the carts, 3) create, print and distribute educational outreach materials, 4) train employees on the new program collection and guidelines, and 5) inform the community of the future services and provide them with information and time to choose the size of their carts.

RESOURCE IMPACT
Funds to implement the new programs are detailed in “Attachment A”. One time expenses include educational materials & order forms ($40,000), cart purchases, assembly and delivery ($2,007,300), crate collection and recycling ($16,000), temporary help for outreach/education ($23,550), and CNG shop conversion ($100,000), totaling $2,186,850.

Fiscal year 2004-05 adopted-in-concept budget included a 10 percent rate increase for the Refuse Fund to maintain the Council-adopted minimum Rate Stabilization Reserve (RSR). If the 10 percent rate increase adopted-in-concept for FY 2004-05 is approved and the recommended staff programs go forward, no additional rate increases will be needed in FY 2004-05. There will not be any rate reductions in future years if the recommended programs do not go forward, however rate increases could potentially be delayed one fiscal year if the new programs are not approved. Staff identified two (2) one-time reductions in the Refuse Fund operating budget, $1.275 million in the Environmental Services Center - Capital Improvement Project and $585,943 from the adopted-in-concept FY 2004-05 payments to PASCO, as a result of PASCO being more than 2% outside the target operating ratio range in FY 2002-03. These reductions will provide the majority of the one time funding for the capital costs of the new programs with remaining amount funded by the RSR.

The on-going costs for the proposed new programs are anticipated to be $659,414 in FY 2005-06 and $630,944 in FY 2006-07 and each following fiscal year, mostly due to the anticipated loss of revenue ($740,000), from the sale of recyclable materials. These on-going costs have a rate impact calculated at nearly 3% of the revenue requirements for the refuse fund.

ENVIRONMENTAL REVIEW
This project is a class 8 categorical exemption from the California Environmental Quality Act under Section 15308 – action by regulatory agencies for the protection of the environment.

POLICY IMPLICATIONS
The implementation of the new services would temporarily be in conflict with the City’s Comprehensive Plan N-55, which requires the City to “Maintain and expand the use of
the Recycling Center at the City’s refuse disposal area”. However, the implementation of the Environmental Services Center full size proposal would provide single stream processing and would make the new services consistent with the Comprehensive Plan.

**ATTACHMENTS**
Attachment A: Cost comparison of services considered for both PASCO and the City budgets.

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