

**NOTICE OF PUBLIC MEETING
PHOENIX CITY COUNCIL
TRANSPORTATION AND INFRASTRUCTURE SUBCOMMITTEE**

Pursuant to A.R.S. Section 38-431.02, notice is hereby given to the members of the **PHOENIX CITY COUNCIL TRANSPORTATION AND INFRASTRUCTURE SUBCOMMITTEE** and to the general public, that the **PHOENIX CITY COUNCIL TRANSPORTATION AND INFRASTRUCTURE SUBCOMMITTEE** will hold a meeting open to the public on **Tuesday, January 8, 2013 at 10:00 a.m., located at Phoenix City Hall, 1st Floor Atrium, Assembly Rooms A, B, & C, 200 West Washington Street, Phoenix, Arizona.**

One or more Subcommittee members may participate via teleconference. The agenda for the meeting is as follows (items may be discussed in a different sequence than posted):

1.	Call to Order	Chair Williams
2.	Review and Approval of the December 11, 2012 Transportation and Infrastructure Subcommittee Meeting Minutes.	Page 3
Item 3 is for Consent Action. Although no presentation is planned, staff will be available to answer questions.		
3.	American Waterworks Association (AWWA) and National Association of Clean Water Agencies (NACWA) Annual Fees This report provides the Transportation & Infrastructure Subcommittee a summary of the American Waterworks Association (AWWA) and National Association of Clean Water Agencies (NACWA) annual fees and requests the Subcommittee recommend City Council approval of continued participation in the two programs for fiscal year 2012-13 at a total cost of \$52,277. This item is for consent action.	Neil Mann, Water Services Page 7
Items 4-7 are for information, discussion and possible action.		
4.	Request to Implement Public Transit Department Bus Procurement Strategy This report requests the Transportation and Infrastructure Subcommittee recommend approval to implement the Public Transit Department's (PTD) fuel and bus procurement strategy, including: the transition from liquefied natural gas (LNG) to liquefied compressed natural gas (LCNG); the purchase of forty-foot compressed natural gas (CNG) buses; and the implementation of facility improvements needed to store and dispense CNG. This item is for information, discussion and possible action.	Neal Young, Public Transit Page 9

5.	<p>Request for Approval to Issue Request for Proposals to Administer Alternative Transportation Programs</p> <p>This report requests the Transportation, Infrastructure and Sustainability Subcommittee recommendation to issue a Request for Proposals for the administration of Alternative Transportation Option programs.</p> <p>This item is for information, discussion and possible action.</p>	<p>Neal Young, Public Transit</p> <p>Page 13</p>
6.	<p>Solar Street Lighting Evaluation</p> <p>The purpose of this report is to update the City Council on efforts by the Street Transportation and Public Works Departments to evaluate a solar technology for lighting streets and City facilities that will result in lower overall costs and less energy use, maintaining appropriate lighting levels for city streets, and without diminishing the amount of light being provided.</p> <p>This item is for information, discussion and possible action.</p>	<p>Wylie Bearup, Street Transportation</p> <p>Page 15</p>
7.	<p>Energy Efficient Street Lighting Conversion Plan</p> <p>This report requests that the Transportation & Infrastructure Subcommittee recommend the City Council approve the proposed Energy Efficient Street Light Conversion Plan and the associated budget adjustments. This plan will subsequently be initiated to install energy efficient street lights along public roadways in the City of Phoenix.</p> <p>This item is for information, discussion and possible action.</p>	<p>Wylie Bearup, Street Transportation</p> <p>Page 17</p>
8.	<p>Call to the Public: Consideration, discussion, and concerns from the public. Those wishing to address the Subcommittee need not request permission in advance. Action taken as a result of the public comment will be limited to directing staff to study the matter or rescheduling the matter for further consideration and decision at a later date.</p>	<p>Chair Williams</p>
9.	<p>Request for Future Agenda Items</p>	<p>Chair Williams</p>
10.	<p>Adjournment</p>	<p>Chair Williams</p>

For further information, please call Cynthia Aguilar, Management Assistant, City Manager's Office, at 602-495-7195 or Melissa Hoffman at 602-262-4449.

Persons paid to lobby on behalf of persons or organizations other than themselves shall register with the City Clerk prior to lobbying or within five business days thereafter, and must register annually to continue lobbying. If you have any questions about registration or whether or not you must register, please contact the City Clerk's Office at 602-262-6811.

For reasonable accommodations, call Cynthia Aguilar at Voice/602-495-7195 or TTY/602-534-5500, or Melissa Hoffman at 602-262-4449 as early as possible to coordinate needed arrangements.

January 3, 2013

Phoenix City Council
Transportation and Infrastructure Subcommittee
Summary Minutes
Tuesday, December 11, 2012

City Council Subcommittee Room
Phoenix City Hall, Assembly Rooms A, B, and C
200 West Washington Street
Phoenix, Arizona

Subcommittee Members Present

Councilwoman Thelda Williams, Chair
Councilman Daniel Valenzuela
Vice Mayor Michael Johnson

Staff Present

Jenny Grote
Neil Mann
Ted Mariscal
Lisa Takata
Penny Parella
Pam Willier
Rick Naimark
Greg Gonzales
Brandy Kelso
Syd Anderson
Gracie Marquez
Melissa Sweinhagen
Nikki Hicks
Jenn Shoop

Staff Present

Neal Young
Jeff Stapleton
Wendy Villa
Toni Maccarone
Thomas Remes
Wylie Bearup
Dennis Murphy
Ray Dovalina
Eric Johnson
Dana Owsiany
Cynthia Campbell
Thomas Godbee
Melissa Hoffman
Cynthia Aguilar

Public Present

Connie Phillips
Ward Simpson
Jeff Rosen
Marvin Rochelle
Matt Tsawh
Margaree Bigler
Deron Lozano
Dustin Gardiner

1. **Call to Order.**
Chairwoman Williams called the meeting to order at 10:07 a.m. with Vice Mayor Johnson and Councilmen Valenzuela present. Councilman Waring was absent.
2. **Review and Approval of the November 13, 2012 Transportation and Infrastructure Subcommittee Meeting Minutes.**
Vice Mayor Johnson moved to approve the minutes from the November 13, 2012 Transportation and Infrastructure Subcommittee meeting. Councilman Valenzuela seconded the motion, which passed 3:0.
3. **Water Research Program.**
Vice Mayor Johnson moved to approve the item. Councilman Valenzeula seconded the motion, which passed 3:0.
4. **Fare Media (Transit Pass) Advertising.**
Vice Mayor Johnson moved to approve the item. Councilman Valenzuela seconded the motion, which passed 3:0.

5. Update on Grand Avenue Corridor Initiatives.

Bob Hazlett, from the Maricopa Association of Governments, briefed the Subcommittee on the Grand Avenue Corridor Optimization Access Management Plan and Systems Study (COMPASS). He discussed the scope of work for the project, as well as the project's charter. He stated the charter was designed to provide a vision for Grand Avenue.

Mr. Hazlett stated the goal is to improve traffic flow and improve economic vitality. He discussed meetings with the planning partners, including Phoenix, and stated additional goals are to improve travel time and possibly eliminate the six-legged intersections, as well as accommodate for growth and development.

Mr. Hazlett stated the project will be completed by February, and all the progress and planning papers can be found on AZMAG.gov.

Deputy Street Transportation Director Shane Silsby discussed the participants from the cities, towns, and communities along Grand Avenue and discussed coordination by MAG. He stated MAG is looking to showcase Grand Avenue and is planning to celebrate the project once ADOT completes the first phase in 2013.

Councilman Valenzuela thanked City staff for their presentation. He stated he uses Grand Avenue most days and is concerned with the blight and graffiti in the industrial areas. He stated it is time to work together on improving this area.

Vice Mayor Johnson stated he is pleased with the activities going on at Grand Avenue. He stated this type of work is good for the community. He noted Grand Avenue will continue to be a high-traffic area, especially as the City grows. Vice Mayor Johnson stated communities in the area need to be involved. He commented he likes the name "I ♥ GRAND AVENUE".

Chairwoman Williams stated her appreciation for staff's work. She stated Grand Avenue has been an underappreciated area, and she is glad to see the City focus on this area. She stated it is imperative for cities to work together in regards to zoning and economic development.

Chairwoman Williams requested staff return with an update in six to eight months.

6. Proposal to Update the Downtown Special Event Traffic Management Plan (Sunburst Plan).

Deputy City Manager Rick Naimark introduced the item and discussed the process and plan to reevaluate the Sunburst plan.

Street Transportation Director Wylie Bearup explained the Sunburst plan and discussed effective traffic management and improved traffic flow. He stated the Sunburst plan is designed to address various traffic initiatives, particularly those related to moving traffic around quickly after downtown events.

Assistant Street Transportation Director Ray Dovalina stated the goal of the Sunburst plan is to have a 360 degree disbursement of pedestrians and vehicles, with minimum impacts to businesses while still maximizing economic opportunities. He stated the Sunburst plan is designed to provide a positive experience for event goers and businesses.

Mr. Dovalina stated the current plan has been in existence for over 20 years, and its boundaries encompass 7th Street to 7th Avenue, Roosevelt to Lincoln Streets. He discussed the major stakeholders, including patrons, light rail/transit riders, and downtown residential.

Mr. Dovalina stated the Sunburst plan also involves the Phoenix Police Department, and staff working on the Sunburst plan has been working closely with Police to address potential issues.

Mr. Dovalina noted the next steps are to have a stakeholder kick off meeting, continue to brief subcommittees, and meet with external partners.

Mr. Naimark stated this is a multi-stage process with short and long term goals. He emphasized how much has changed from 20 years ago and the need to update the Sunburst plan.

Vice Mayor Johnson expressed concern for the boundaries in the plan, and asked if the streets could be expanded out to Buckeye and McDowell. He stated it is important to recognize the I-10 and its impact on traffic in the downtown area.

Chairwoman Williams stated she is looking forward to seeing this project develop. She stated it is difficult for residents and businesses to manage during large events currently, and it is imperative for the Sunburst plan to be updated.

Councilman Valenzuela moved to approve the motion with the new boundaries of Buckeye and McDowell roads. Vice Mayor Johnson seconded the motion, which passed 3:0.

7. Call to Public.

Jeff Rosen thanked the Subcommittee for their support of the volunteer streets task force.

Chairwoman Williams requested that the volunteer streets force be on a future agenda.

Margaree Bigler asked the Subcommittee to consider more bike lanes and bike racks throughout the City. She stated this would connect communities and enhance mobility.

Chairwoman Williams requested City staff meet with the resident to brief her on upcoming bike projects. She asked the resident to discuss bike accessibility issues with City staff.

8. Request for Future Agenda Items.

No requests were made.

9. Adjournment.

Chairwoman Williams adjourned the meeting at 10:41 a.m.

Respectfully Submitted,

Melissa Hoffman
Management Intern

CITY COUNCIL REPORT

TO: Jerome E. Miller
Deputy City Manager

FROM: Neil Mann, P. E.
Acting Water Services Director

SUBJECT: AMERICAN WATERWORKS ASSOCIATION (AWWA) AND NATIONAL
ASSOCIATION OF CLEAN WATER AGENICES (NACWA) ANNUAL FEES

This report provides the Transportation & Infrastructure Subcommittee a summary of the American Waterworks Association (AWWA) and National Association of Clean Water Agencies (NACWA) annual fees and requests the Subcommittee recommend City Council approval of continued participation in the two programs for fiscal year 2012-13 at a total cost of \$52,277.

THE ISSUE

The Water Services Department participates in two water industry professional associations, American Waterworks Association (AWWA) and National Association of Clean Water Agencies (NACWA). These organizations provide a variety of benefits to the City including assistance to improve day-to-day operation, professional development opportunities for staff, public outreach efforts, and ongoing updates to keep staff informed about regulatory issues well in advance of action being taken.

AWWA, established in 1881, is the oldest and largest nonprofit, scientific and educational organization dedicated to safe and sustainable drinking water. AWWA advances public health, safety and welfare by uniting the efforts of the entire water community. Some of the resources available from AWWA include:

- Publications – AWWA Standards, operator training manuals, books, and monthly magazines focused on operational and engineering challenges are available for purchase. Updates of all AWWA Standards are included with the yearly fee as well as discounted pricing on all other materials for all City employees.
- Training – AWWA offers a variety training opportunities including webcasts, specialty conferences, and online training classes. All City employees are eligible for member pricing which provides cost savings on event registration and trainings. In 2013, the Utility Management Conference will be held in the Phoenix area and several City staff are presenters and/or moderators at the event.
- Public communications tools – [Public](#) advisories are send out to all utilities to keep them informed about water-related news that generates media attention. These public advisories often include suggested language or strategies to help Phoenix respond to media inquiries.
- Advocacy – AWWA helps to form a united voice on drinking water issues and standards. [Utility alerts](#) are provided periodically throughout the year to ensure timely updates on regulatory issues.

NACWA was established in 1970 with a focus on issues dealing with the Clean Water Act that centers on wastewater collection and treatment. NACWA provides many of the

same types of benefits as AWWA such as a variety of publications and professional development and training opportunities. NACWA, however, is heavily focused on emerging and evolving legislative and regulatory environmental initiatives. The information provided by NACWA is utilized by City staff and lobbying teams to formulate the City's policy messages on national issues. In addition, NACWA offers opportunities to collaborate with colleagues around the country to help shape national policy.

Participation with both AWWA and NACWA allows the City to access a variety of publications and training to ensure City staff is prepared to provide safe, affordable drinking water and environmentally safe wastewater. In addition, participation ensures that the City is well informed on future regulatory issues that may impact the financial and operational sustainability of the City.

RECOMMENDATION

Staff recommends the Transportation & Infrastructure Subcommittee recommend City Council approval to continue its financial participation in the American Waterworks Association (AWWA) and National Association of Clean Water Agencies (NACWA) at a cost of \$18,527 and \$33,750, respectively for a total combined participation cost of \$52,277.

CITY COUNCIL REPORT

TO: Ed Zuercher
Assistant City Manager

FROM: Neal Young
Interim Public Transit Director

SUBJECT: REQUEST TO IMPLEMENT PUBLIC TRANSIT DEPARTMENT BUS
PROCUREMENT STRATEGY

This report requests the Transportation and Infrastructure Subcommittee recommend approval to implement the Public Transit Department's (PTD) fuel and bus procurement strategy, including: the transition from liquefied natural gas (LNG) to liquefied compressed natural gas (LCNG); the purchase of forty-foot compressed natural gas (CNG) buses; and the implementation of facility improvements needed to store and dispense CNG.

BACKGROUND

Phoenix's transit bus fleet is operated, maintained, and fueled at three city-owned maintenance facilities: West Transit Facility (405 North 79th Avenue), North Transit Facility (2010 West Desert Cove), and South Transit Facility (2225 West Lower Buckeye Road). The heavy duty transit fleet is made up of 465 vehicles, 65% of which operate on LNG. The remaining 35% operate on ultra-low sulfur diesel. This ratio of fuel types follows the Council-adopted policy to maintain the transit fleet with a diversity of fuel types such that a Sunday-level of service can be maintained at all times. This strategy is adopted to protect from disruptions in any one fuel supply. The LNG portion of the fleet is believed to be the largest LNG transit fleet in the United States.

In the 1990s, LNG transit fleets represented the forefront in fuel technology with competitive pricing, environmentally friendly fuel, and mass availability of equipment and parts. However, in recent years, interest in LNG buses has waned due to the limited amount of LNG fueling equipment suppliers, the complicated and cumbersome nature of LNG fueling equipment, and increased costs associated with purchasing and maintaining LNG buses. The PTD's recent request for proposals (RFP) for the purchase of LNG buses has mirrored the transit industry's overall experience with LNG buses, in that LNG vehicles no longer have widespread utilization in the transit industry, and LNG vehicles are much more expensive than diesel or CNG vehicles.

THE ISSUE

The PTD desires to continue to operate a largely alternative fuel transit fleet utilizing natural gas technology. Currently, the PTD recommends replacement of 120 LNG retirement-eligible buses with new CNG buses on a one-to-one basis. This will keep the ratio of alternative fueled buses at 65 percent of the overall heavy duty fleet, with possible expansion in the future. CNG vehicles have a lower cost of ownership than LNG and diesel buses and also have lower emissions than both LNG and diesel.

OTHER INFORMATION

The PTD procured a fuel consultant in July 2012, Gladstein, Neandross & Associates (GNA), to assist with performing an analysis of alternative fuel options for its bus fleet and to assist with developing a long-term fuel strategy. In December 2012, GNA provided their recommendations to PTD. GNA indicated that modern natural gas buses had the absolute lowest total cost of ownership over the life of the vehicle as compared to other alternative fueled and advanced technology vehicles. GNA further noted that CNG buses and fuel for the transit fleet represented a clean, domestic, highly cost-effective alternative to its diesel and LNG counterparts. Accordingly, GNA has recommended that the PTD improve its infrastructure to convert LNG to LCNG and that future vehicle purchases utilize CNG as a fuel source. Furthermore, GNA recommends PTD consider a complete transition to CNG fueling infrastructure at the transit facilities. The PTD proposes to utilize GNA's fuel recommendation in its overall fuel and bus procurement strategy.

To assist in the implementation of the recommendation, PTD staff has identified a cooperative purchasing opportunity to procure 40-foot CNG buses via a partnership with Valley Metro/Regional Transportation Authority (RPTA). The RPTA has an active contract with New Flyer of America, from which PTD can purchase up to 120 buses. PTD has determined that the RPTA contract meets FTA requirements and that the bus pricing is cost competitive. The PTD will continue to buy LNG fuel which will then be converted to LCNG for fueling CNG buses. Transit contractors will be receptive to the purchase of CNG buses, as it will alleviate concerns regarding the maintenance of older buses and procuring hard to find LNG equipment parts. The current estimate for bus deliveries is to obtain 60 replacement buses in Fall 2013 and an additional 60 in Spring 2014, in coordination with planned infrastructure improvements.

In order to accommodate the fueling requirements for a compressed natural gas (CNG) bus fleet, these existing facilities will require upgrades to the existing fueling infrastructure. Facility improvements would begin one facility at a time, based on the delivery schedule for new CNG buses to minimize the disruption to existing operations. Cost estimates for infrastructure upgrades during FY12/13, FY13/14, and FY14/15 total \$4.0 million. Funding for transit facility LCNG fueling upgrades is available in the T2000 fund as programmed in the City's Capital Improvement Program. Further CNG expansion efforts will need to be programmed as part of future planned overall facility refurbishments. Funding for the replacement 120 buses has already been secured in the form of Transit Improvement Program and grant funds. The total cost of purchasing the initial 120 buses is estimated at \$61 million, with 83% being federally funded and the remaining 17% funded with regional transportation funds.

RECOMMENDATION

This report requests the Transportation and Infrastructure Subcommittee recommendation to implement the Public Transit Department's fuel and bus procurement strategy, including:

- Transition from liquefied natural gas (LNG) to compressed natural gas (CNG)
- Purchase 120 forty-foot replacement CNG buses
- Issuance of an Invitation for Bids (IFB) for the continued delivery of natural gas for use in transit buses

Facility improvements at the three transit operating facilities to provide the necessary fueling infrastructure to accommodate the transition to CNG buses within Phoenix's transit fleet.

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CITY COUNCIL REPORT

TO: Neal Young
Interim Public Transit Director

FROM: Jesús Sapien
Deputy Public Transit Director

SUBJECT: REQUEST FOR APPROVAL TO ISSUE REQUEST FOR PROPOSALS TO
ADMINISTER ALTERNATIVE TRANSPORTATION OPTION PROGRAMS

This report requests the Transportation, Infrastructure and Sustainability Subcommittee recommendation to issue a Request for Proposals for the administration of Alternative Transportation Option programs.

THE ISSUE

In July 2008 the Phoenix City Council approved entering into a contract for the provision of alternative transportation services. The current contract expires June 30, 2013 and a new contract is needed to continue services.

Alternative transportation options for Phoenix residents, either age 65 and over or determined eligible under the Americans with Disabilities Act (ADA), are provided through various taxi subsidy programs administered through the existing contract. Programs currently include Taxi Vouchers for Employment, Taxi Vouchers for Dialysis, the Senior Cab Coupon Program, Reserve-A-Ride, and the ADA Cab Program.

Alternative transportation options do not replace the federally required paratransit service (as provided through Phoenix Dial-a-Ride), but instead provide transportation resources for populations affected with transportation challenges due to the elimination of same-day (“demand”) trips within the Dial-a-Ride system. As of the first quarter of FY12/13, over 3,000 individuals are registered to use the various programs, and over 10,000 trips have been provided by 31 participating taxi service providers in the metropolitan Phoenix area.

OTHER INFORMATION

The contract budget for FY12/13 is \$887,144 (see chart below), with each program allocated its own funding including federal grant funds and local matching funds. During FY11/12, a total of 40,469 trips were provided to eligible Phoenix residents. The new contract budget will be combined to provide funding for all of the programs under the agreement, allowing underutilized funds from one program to be allocated to programs which have realized higher enrollment and use.

Transportation Options Program Funding	
General Fund	\$100,000
Transit 2000	\$637,144
Federal Grant Funds	\$150,000
Total	\$887,144

The RFP will include an option to administer a Senior Center Shuttle program which will replace the City's Reserve-A-Ride program in providing trips to qualified participants to and from City of Phoenix Senior Centers. As authorized by City Council, a Senior Center Shuttle pilot program is currently being conducted during September – December 2012. The results of the pilot program will be evaluated to determine its effectiveness to be considered as an option to replace the Reserve-A-Ride program.

RFP evaluation criteria will include the following:

- Qualifications, experience and past performance
- Proposed organizational structure and personnel
- Understanding of work scope and transition plan
- Cost

The RFP is scheduled to be issued in January 2013, with an evaluation process and recommendation to award thereafter. The RFP will be advertised locally and nationally.

RECOMMENDATION

This report requests the Transportation, Infrastructure and Sustainability Subcommittee recommendation to issue a Request for Proposals for the administration of Alternative Transportation Option programs.

CITY COUNCIL REPORT

TO: Rick Naimark
Deputy City Manager

FROM: Wylie Bearup, PE, PhD
Street Transportation Director/City
Engineer

SUBJECT: SOLAR STREET LIGHTING EVALUATION

The purpose of this report is to update the City Council on efforts by the Street Transportation and Public Works Departments to evaluate a solar technology for lighting streets and City facilities that will result in lower overall costs and less energy use, maintaining appropriate lighting levels for city streets, and without diminishing the amount of light being provided.

THE ISSUE

Phoenix has over 90,000 streetlights which illuminate over 5,000 miles of streets, using an annual energy budget of over \$10 million. Most of the streetlights are High Pressure Sodium (HPS) lights. Phoenix purchased the streetlight system from Arizona Public Service (APS) and Salt River Project (SRP) in 1988 and upgraded the lights to High Pressure Sodium at that time to lower costs and to reduce the amount of light pollution in accordance to the City's dark sky ordinance.

Over the past decade street lighting technology has continued to evolve providing options with the potential to further reduce energy consumption and costs. The Street Transportation Department has been studying these options and has conducted pilot installations of two promising technologies, Light Emitting Diodes (LEDs) and Induction Lighting, which will be discussed in greater detail in another Council report.

Another new technology with great potential for cost savings is the possibility of using solar energy generated by photovoltaic panels attached to the streetlight poles. Currently two different installations are being considered: Large, flat panels mounted at the top of the streetlight pole or a flexible membrane wrap attached to the vertical section of the streetlight pole. Both options face major technical and financial challenges before either could be fielded throughout the City's streetlighting network. Existing streetlight poles do not have the structural capacity to support the additional loads that the solar panels will create. In addition, individual streetlights would have to be metered to precisely measure (1) the amount of electrical energy consumed from the power grid and (2) the amount of excess energy produced by the installation and returned to the power grid. Additional issues that currently impact solar street lighting installations include:

1. High installation costs;
2. Consistency and intensity of light produced is only suitable for local streets;
3. Battery life and maintenance;
4. Environmental issues related to battery disposal; and

5. Agreements with the power companies to provide power back to the grid system and potential conflicts with the Arizona Corporation Commission.

Staff members in the Street Transportation and Public Works Departments continue to work on discovering solutions to these challenges through meetings with industry representatives, attendance at technical conferences, and pilot installation projects. While staff has met with several companies that provide solar street lighting, due to the high capital cost, only one company (Green Global Inc.) was willing to participate in a City-sponsored pilot program. Staff worked extensively with the company to test their solar wrap, but unfortunately they were not able to meet the requirements necessary with APS to move forward with further testing.

Public Works Department staff also met with Green Global, Inc. to discuss the possibility of installing solar wraps on poles that provide parking lot lighting at City facilities. The company was unable to specify a product that would integrate with the voltage requirements of the City's lighting systems and, therefore, no further actions were taken to pilot the system. The Public Works Department does utilize photovoltaic solar panels on a number of City facilities to generate power for overall building operations.

Another active solar pilot project is underway along Galvin Parkway near the Desert Botanical Garden. This parks service road was improved in 2010 and seven solar-powered LED street lights were installed because there was no direct power source in the area. Due to the low night time traffic volumes on this roadway and the absence of pedestrians, these lights operate on a sensor and only turn on when vehicles are detected. The Street Transportation Department will continue to monitor these solar lights to see how well they operate in the field and how long the batteries last in Phoenix's climate.

Staff has also surveyed the use of solar street lights in other municipalities. The City of Tucson has undertaken a fairly large pilot project with 42 solar-powered LED street lights using a pole-wrapped collector, which shows great promise.

RECOMMENDATION

This report is for information only. Staff will continue to work with APS and solar manufacturers to test solar street lights available on the market to explore additional energy savings for street lights.

CITY COUNCIL REPORT

TO: Rick Naimark
Deputy City Manager

FROM: Wylie Bearup, PE, PhD
Street Transportation Director

SUBJECT: ENERGY EFFICIENT STREET LIGHTING CONVERSION PLAN

This report requests that the Transportation & Infrastructure Subcommittee recommend the City Council approve the proposed Energy Efficient Street Light Conversion Plan and the associated budget adjustments. This plan will subsequently be initiated to install energy efficient street lights along public roadways in the City of Phoenix.

THE ISSUE

The Street Transportation Department operates and maintains approximately 90,000 street lights, across the city. These street lights use High Pressure Sodium (HPS) fixtures which has been the standard in the industry for the last 30 years. Newer technology light fixtures began appearing in the marketplace approximately five years ago. Staff has been evaluating these new technologies for possible adoption based upon Mayor, City Council, and industry requests. The main goals of the new technology are to reduce energy costs, reduce routine maintenance expenses, and improve the quality of light provided in a cost effective, sustainable manner.

Although early versions of new streetlight fixtures appeared promising, capital costs were too high and operating costs were unknown or highly variable so the City continued with HPS as the standard streetlight fixture. Within the last 2 years, Light Emitting Diode (LED) street light fixtures have improved greatly. After years of testing and development, LED fixtures have now demonstrated stabilized purchase costs, reduced energy consumption by roughly 50 percent, delivered reliability with a 10 year warranty, and improved light properties to properly disperse the required lighting levels along the roadway. The newest generation of LED fixtures can deliver these desired light properties when installed at the same height and spacing as previous HPS light fixtures, greatly reducing future costs for conversion.

In light of these developments, the City adopted LED fixtures as its new standard street light fixture earlier this year. The Development Advisory Board was updated on the new standard on October 18, 2012 and gave their concurrence so all future streetlight installations will be required to comply with this standard. Since that time, approximately 200 LED street lights have been installed throughout the city primarily by private developers.

OTHER INFORMATION

The Street Transportation Department is now moving forward with a plan to convert the existing street lights to this newer, more energy efficient technology. The City continues to pay approximately \$10 million per year in energy costs for current HPS street lights.

The following table represents the current number of street lights on public roadways by street classification and the associated monthly energy costs per light per month for both the previous High Pressure Sodium (HPS) standard and the new LED standard. The table demonstrates the potential to save roughly 50 percent on both energy costs and maintenance costs by converting to LED fixtures.

Street Type	Number of Lights	HPS-Energy	LED-Energy	HPS-Maint.	LED-Maint.
Arterial Street	26,695	\$ 6.03	\$ 3.10	\$ 1.20	\$ 0.60
Collector Street	7,254	\$ 4.20	\$ 2.25	\$ 1.20	\$ 0.60
Local Street	55,542	\$ 2.50	\$ 1.09	\$ 1.20	\$ 0.60

The new standard LED fixture uses fewer watts than the HPS fixture (139 watts versus 280 watts), thus consuming over 50 percent less energy. The resulting major reduction in kilowatt hours is consistent with the City’s goal of reducing greenhouse gases and to create more sustainable infrastructure systems.

One approach to fund the conversion cost is through the reprogramming of unspent operating funds from the street lighting budgets. Staff proposes utilization of unexpended budget amounts in the street light maintenance accounts to fund the capital costs for the initial phases of the conversion plan. As more street lights are converted to LED, annual energy cost savings will also be realized that will generate more reprogrammed capital funds to utilize for additional conversions.

Another approach to funding conversion costs would be through the supplemental budget process. The Street Transportation Department could submit a request for \$3.4 million in additional funding for each of the next 15 years to fully fund the LED conversion process. This approach would require a net increase in the Department budget which could ultimately be financed through decreased energy costs, but savings would lag behind the need for capital for a number of years.

RECOMMENDATION

Staff recommends that the Transportation and Infrastructure Subcommittee recommend the City Council approve the Energy Efficient Street Light Conversion Plan whereby annual unspent operating budget balances from the street lighting program will be reprogrammed to a capital fund for the purposes of purchasing and installing LED street lights to convert from the existing HPS street light technology.