



- *Board of Directors  
Engineering and Operations Committee*

3/10/2015 Board Meeting

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**8-6**

## **Subject**

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Authorize execution of a purchase contract with Pacific Air Center in the amount of \$2,179,128 for the purchase of a 2015 Model 208 Cessna Caravan aircraft complete with all specified equipment and avionics

## **Summary**

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Metropolitan currently operates two nearly identical Beechcraft Baron Model 58 aircraft, manufactured in 1991 and 1997. These aircraft are primarily used to patrol Metropolitan's conveyance infrastructure and support water system operations by transporting cargo, personnel, and water samples to and from remote facilities on a regular basis, and to support emergency repairs and response needs. The 1991 Baron has over 7,000 hours of flight time and is scheduled for replacement using budgeted operating equipment funds.

Metropolitan budgets approximately \$6 million each year for replacement of operating equipment. A large percentage of the operating equipment budget is for fleet vehicle replacement ranging from sedans to heavy equipment. Equipment is considered for replacement based on a set of criteria including age, accumulated mileage or hours of operation, safety, reliability, and repair costs. Based upon the age, hours of use, and estimated service life, the 1991 Baron meets the criteria for replacement at this time. Funding for the purchase of a replacement aircraft was included and approved in the current biennial budget.

With the assistance of a consultant, staff performed a comprehensive evaluation of commercially available aircraft that could meet Metropolitan's current business needs. The evaluation revealed that several manufacturers produce models that are available in a high-wing, turboprop-powered configuration, and are able to carry up to ten passengers or larger cargo. Based on this evaluation, general aircraft specifications were developed and released using a best value procurement. The request for proposal included the option for bidders to submit either new or used aircraft that met the specifications. The award recommendation was based on a scoring of the respondents' proposals, which considered adherence to the specifications, aircraft condition, and overall cost. The cost component included the trade-in value of the 1991 Baron. The current action will authorize award and execution of a purchase contract with Pacific Air Center for a replacement aircraft and will also include transfer of ownership of the 1991 Baron.

## **Detailed Report**

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Metropolitan currently operates two nearly identical Beechcraft Baron Model 58 aircraft manufactured in 1991 and 1997. The aircrafts were purchased new and have logged over 7,000 and 5,000 hours of total flight time, respectively. Flight time on each aircraft averages between 325 and 360 hours per year in support of operations and maintenance activities. In general, these activities fall into one of five main categories:

- Water sampling, collection and delivery
- Aqueduct and high-voltage power line patrol
- Emergency response
- Staff transportation within California, Arizona, and Nevada
- Cargo transportation.

For maximum efficiency, one of the planes is based at Brackett field in Pomona and the other is based at Gene Camp. Flight requests are coordinated to minimize the total number of flights and resulting hours on the airframe and engine. Of 317 flights in a one-year period, 74 percent carried two or more passengers in addition to the pilot.

### **Replacement Criteria**

Metropolitan's 1991 Baron is approximately 24 years old and has over 7,000 hours of flight time. The aircraft has received all scheduled maintenance including engine overhauls and inspections in accordance with Federal Aviation Administration requirements. However, after 24 years of operation, the plane is showing signs of typical aging including airframe stress induced by unique operating conditions related to the high ratio of take-offs and landings, desert climate, and steep descent/climb angles at some of Metropolitan's remote facilities. A typical flight mission may include eight take-off and landing cycles in a single 400-mile round-trip. Aircraft longevity and airworthiness are difficult to determine as they are affected by the type of use and number of flight cycles rather than purely flight hours and maintenance records. Agencies using similar aircraft with comparable flight cycles, including the USDA Forest Service, have replaced their aircraft at or near 6,000 hours of flight time.

To aid in determining the appropriate timing for replacing Metropolitan's aircraft, an aircraft consultant was utilized. The consultant's evaluation included review of annual flight records, operating conditions, and maintenance records. The evaluation noted that full utilization of the cabin capacity is often limited during summer high temperatures and the pilot must also run with less fuel and carefully balance or limit the cargo load. The evaluation also noted that the number of take-offs and landings, steep climbs, turbulence, and operating climate that Metropolitan's aircraft experience during normal mission flights are significantly more rigorous than the typical usage, reducing the expected longevity of the aircraft. The evaluation recommended that the 1991 Baron be replaced at this time. In support of the recommendation, the consultant cited several federal agencies and studies that supported replacement at or near the hours on Metropolitan's 1991 Baron. It is generally considered cost prohibitive to tear down and inspect the airframe (as is common with commercial carriers) to ensure that metal fatigue has not begun to erode the structural integrity.

### **Procurement Specifications and Process**

Metropolitan has owned and operated aircraft to support operations since the early 1960s. Over the last 50 years, commercially available small aircraft have made substantial gains in performance, navigation, safety, and reliability. When considering a replacement for the 1991 Baron, staff performed a comprehensive evaluation of commercially available aircraft that would best meet Metropolitan's current business needs. The consultant used to evaluate replacement of the 1991 Baron also made recommendations on new aircraft specifications based upon Metropolitan's usage and operating conditions. These evaluations considered aircraft features including passenger and cargo capacity, wing configuration for increased ground visibility, engine type and fuel, horsepower, capability to operate on short runways with steep take-off and approach angles, instrumentation and avionics packages, overall cost of operation, product support, reliability, and safety record. Several manufacturers have and continue to produce aircraft meeting the general specifications that meet Metropolitan's business needs. The transition from piston-powered to turboprop aircraft was found to be warranted based on industry-recognized data (accident data statistics published by the Federal Aviation Administration and the National Transportation Safety Board) that indicate increased reliability and lower accident rates for turboprop aircraft compared to their piston-powered counterparts.

Based on this review, general aircraft specifications were developed and released under the Best Value Procurement method and Request for Proposals process (RFP-AB-288071). The request for proposals included the option for bidders to submit both new and late-model, pre-owned aircraft. The award recommendation was based on scoring of the respondents' proposals which factored in adherence to the specifications, aircraft condition and hours, and overall cost. The cost component also factored in the trade-in value of the 1991 Baron used to offset the total purchase price.

The biennial budget for operating equipment in fiscal years 2014/2015 and 2015/2016 included funding in the amount of \$2.8 million for a replacement aircraft. Staff recommends awarding and executing a purchase contract

in the amount of \$2,179,128 to Pacific Air Center for purchase of a new 2015 Model 208 Cessna Caravan aircraft including the transfer of ownership of the 1991 Baron 58.

## **Policy**

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Metropolitan Water District Administrative Code Section 8140: Competitive Procurement

## **California Environmental Quality Act (CEQA)**

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CEQA determination for Option #1:

The proposed action is not defined as a project under CEQA because it involves continuing administrative activities, such as purchases for supplies (Section 15378(b)(2) of the State CEQA Guidelines). In addition, the proposed action is not subject to CEQA because it involves other government fiscal activities which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not defined as a project and is not subject to CEQA pursuant to Sections 15378(b)(2) and 15378(b)(4) of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

## **Board Options**

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### **Option #1**

Adopt the CEQA determination that the proposed action is not defined as a project and is not subject to CEQA, and authorize execution of a purchase contract with Pacific Air Center in the amount of \$2,179,128 for the purchase of a 2015 Model 208 Cessna Caravan aircraft complete with all specified equipment and avionics.

**Fiscal Impact:** \$2,179,128 of budgeted operating equipment funds in fiscal year 2014/2015

**Business Analysis:** This option would increase the reliability and safety of Metropolitan's aircraft missions by replacing the 1991 Baron 58 aircraft.

### **Option #2**

Do not proceed with replacement of the aircraft at this time.

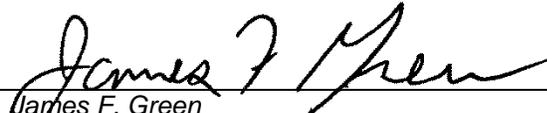
**Fiscal Impact:** None

**Business Analysis:** This option would forgo an opportunity to replace the 1991 Baron 58 aircraft resulting in increased maintenance costs, reduced reliability, and possible safety issues.

## **Staff Recommendation**

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Option #1

  
 \_\_\_\_\_ 2/20/2015  
 James F. Green Date  
 Manager, Water System Operations

  
 \_\_\_\_\_ 2/23/2015  
 Jeffrey Kightlinger Date  
 General Manager