

**MOORPARK CITY COUNCIL  
AGENDA REPORT**

**TO:** Honorable City Council

**FROM:** Jeremy Laurentowski, Landscape and Parks Manager *SL*

**DATE:** October 12, 2011 (CC Meeting of October 19, 2011)

**SUBJECT:** Consider Purchase of a Turf Aerator and Tractor; and Resolution Amending the Fiscal Year 2011/12 Budget

**BACKGROUND**

Arroyo Vista Community Park (AVCP) was originally established in 1993 and was expanded in 2003 to include the east end of the park and the area currently referred to as the Peppertree Pavilion. In 2010, it became apparent that the park was in need of a major restoration as the soil had become overly compacted, restricting root growth and inhibiting the movement of water, air and vital nutrients.

On January 14, 2011 the City contracted with Guise and Associates, a turf consultant, to assess the condition of the sport fields at Arroyo Vista Community Park. The consultant confirmed the compaction problems associated with the park and provided the City with a turf restoration program for immediate implementation, and a long term turf maintenance plan that included a fertilization and aeration schedule.

On April 20, 2011 the City Council approved the restoration of approximately forty-four (44) acres of turf at Arroyo Vista Community Park and Guise's recommendations as follows:

1. Apply deep tine vertidrain aeration
2. Apply 8" solid tine shatter core aeration
3. Apply 15-0-15 fertilizer to stimulate Bermuda turf and Evade herbicide for removal of *Poa annua* grass (1-time)
4. Apply Revolver 20-20-20 herbicide removal of cool season turf
5. Top-dress fields with ¼" sand
6. Apply two (2) additional fertilizations during the initial six (6) month restoration
7. Re-seed bare areas

The turf restoration program at Arroyo Vista Community Park was implemented on May 1, 2011 and was successfully completed on August 15, 2011 at a total cost of \$122,104. The City Council approved Resolution 2011-3017 on April 20, 2011 in the amount of \$130,000 for this work.

## **DISCUSSION**

On February 14, 2011, staff received the restoration recommendations and long term maintenance plan for the turf areas at Arroyo Vista Community Park. The long term turf maintenance program provided by Guise and Associates is summarized below:

### General:

1. General agronomic recommendations for the maintenance of the turf areas at Arroyo Vista Community Park will include mowing the fields at least once per week, and soil testing for fertility requirements twice per year, in the spring and late summer. In addition, the application of slow release fertilizers with low nitrogen rates (1-2 Lbs.) shall be applied at 60-day intervals. Aeration will be required with equipment that will vary the depth of tine penetration and scheduled quarterly, with a deep tine application scheduled once annually.

### Mechanical Soil Aeration:

1. Mechanical soil aeration is a key component in providing and restoring turf grass-playing surfaces.
2. A minimum of four (4) times per year aeration practices are needed and approximately eight (8) times per year in high wear and high use areas.
3. One deep tine aeration practice shall be performed across the site in April. Repeat aeration practices in June, August, October and January (at a minimum). Multiple passes may be required during each aeration practice in order to adequately de-compact the soil.

### Soil Fertility:

1. March 1, apply monopotassium-phosphate (MKP) fertilizer (0-51-33) at a rate of 300 lbs per acre.
2. March 15, apply sulfur-coated urea fertilizer (36-0-0) at a rate of 150 lbs per acre.
3. Repeat sulfur-coated urea application rate at about eight (8) week intervals throughout the summer growing season.
4. April 1, apply Iron Plus fertilizer (with micros) at a rate of 100 lbs per acre. Repeat Iron Plus fertilizer application every other month throughout the first year at a rate of 50 lbs per acre.
5. April 15, apply triple superphosphate (TSP) fertilizer (0-45-0) at a rate of 250 pounds per acre.
6. May 1, apply potassium chloride (muriate of potash, MOP) fertilizer (0-0-60) at a rate of 200 lbs per acre. Repeat this application/rate about in July and again in September.
7. January, May and November Apply 15-0-15 fertilizer.
8. Top-dress the fields with sand annually to ¼ inch depth as required for drainage.

The majority of this work is included in the scope of services provided by the City's contract landscape maintenance company, such as fertilization and mowing. However, aeration, top dressing the fields, and over-seeding is an additional cost not covered in the standard landscape maintenance specifications for landscape maintenance services. Staff has obtained cost estimates to complete these items and has determined that the total annual cost of the maintenance items that are not included in

the landscape maintenance budget or contract specifications for Arroyo Vista Community Park is one hundred thirty-six thousand six hundred dollars (\$136,600). A summary of these costs follows:

Annual Turf Maintenance Cost Summary (44 acres):

1. Shatter-tine aeration four (4) times annually	\$55,900
2. Verti-drain aeration one (1) time annually	\$12,000
3. Top-dress with sand to ¼ inch depth	\$46,700
4. <u>Over-seeding with hybrid Bermuda seed</u>	<u>\$22,000</u>
Total	\$136,600

It should be noted that top-dressing the fields with sand and over-seeding with hybrid Bermuda seed is dependent on use and maintenance practices. Staff has confirmed with Guise and Associates that these maintenance items would be minimal provided on-going aeration practices are implemented.

Staff recommends implementing the above mentioned long term turf maintenance program for Arroyo Vista Community Park and purchasing the required aeration equipment for use by City staff to minimize the cost. The total cost to hire a contractor for the aeration practices at AVCP is approximately \$67,900 annually. Staff has obtained cost estimates for a new aerator and used tractor and has determined that the total cost to purchase this equipment is \$32,600. The used tractor staff has located is a 2004 John Deere 4720 Series with approximately 1,100 engine hours for a cost of \$16,701. The aerator is a 75" tow behind AerWay aerator at a cost of \$12,935. A 2011 John Deere 4720 Series would cost approximately \$33,000 and would total \$52,825 with the same aerator.

Staff has estimated that the life expectancy of this equipment is in excess of twenty (20) years and recommends the purchase of a used tractor. According to John Deere Tractors, the City can expect over 6,000 hours of use with the 4720 series tractor before requiring a major engine overhaul, provided the equipment is properly maintained. This is typical of diesel engines as 10,000 hours of use is not uncommon. Staff has also contacted AerWay and has discovered that the original aerator built in 1984 is still in operation today. Staff had a demonstration of this equipment performed at Arroyo Vista Community Park on September 21, 2011. According to the manufacturer, the 75" aerator has the ability to aerate approximately 3.65 acres per hour. Based on this information, it would take approximately twelve (12) hours of staff time to complete the aeration of forty-four (44) acres of turf at AVCP, or a total of sixty (60) hours of staff time to complete all five (5) aerations during a one (1) year maintenance program. The high speed of operation and simplicity of the equipment were the main advantages of this equipment, as compared to traditional hydraulic aerators such as those used during the turf renovation program at AVCP during the spring of 2011. As a comparison, it took over three and a half weeks to complete the two (2) scheduled aerations. The AerWay aerator can complete the same work in approximately twenty-four (24) hours.

Staff anticipates utilizing this equipment and implementing a similar turf maintenance program at all City parks where sport activities are held, such as Campus Canyon Park, Peach Hill Park, Miller Park, and Mammoth Highlands Park. Staff also anticipates

utilizing this equipment at a minimum of two (2) times annually at the remaining City parks to maximize water penetration, increase the health of the turf and ultimately reduce irrigation water use. Currently the City parks are split between three (3) maintenance staff. Each staff member would perform the required aeration at their assigned parks on a rotated schedule.

Staff has projected that the cost of purchasing this equipment and performing the work with in-house staff is approximately 4 times less costly over a twenty (20) year life expectancy of the equipment, as compared to the cost of hiring a contractor to perform the turf aeration in the City's parks. A summary follows:

<b>SUMMARY: AERATION PERFORMED BY IN-HOUSE STAFF</b>					
Park	Turf Acres	Staff hours (annual)	Staff \$/year.	Equip. \$/park	Total Cost/Year
Arroyo Vista	44.00	60.0	\$ 6,760.00	\$ 792.00	\$ 7,552.00
Campus Canyon	4.50	8.0	\$ 812.50	\$ 81.00	\$ 893.50
Peach Hill	7.00	10.0	\$ 1,105.00	\$ 126.00	\$ 1,231.00
Miller Park	5.00	8.0	\$ 845.00	\$ 90.00	\$ 935.00
Mammoth Park	4.50	8.0	\$ 812.50	\$ 81.00	\$ 893.50
Other parks (10)	40.00	22.0	\$ 4,030.00	\$ 720.00	\$ 4,750.00
<b>Total</b>	<b>105.00</b>	<b>116.0</b>	<b>\$ 14,365.00</b>	<b>\$ 1,890.00</b>	<b>\$ 16,255.00</b>
Staff cost is based on \$65/hour					
The equipment cost per year is based on twenty (20) year life, 15% contingency for repairs and maint. and assessed per turf acre: (\$32,600/105 acres)/20 years X 15% = \$18/acre per year					
<b>SUMMARY: AERATION PERFORMED BY CONTRACTOR</b>				<b>20-YEAR COST SUMMARY:</b>	
Park	Turf Acres	Total Cost/Year		Contractor	In-House staff
Arroyo Vista	44.00	\$ 28,468.00		\$ 569,360.00	\$ 151,040.00
Campus Canyon	4.50	\$ 2,911.50		\$ 58,230.00	\$ 17,870.00
Peach Hill	7.00	\$ 4,529.00		\$ 90,580.00	\$ 24,620.00
Miller Park	5.00	\$ 3,235.00		\$ 64,700.00	\$ 18,700.00
Mammoth Park	4.50	\$ 2,911.50		\$ 58,230.00	\$ 17,870.00
Other parks (10)	40.00	\$ 25,880.00		\$ 517,600.00	\$ 95,000.00
<b>Total</b>	<b>105.00</b>	<b>\$ 67,935.00</b>		<b>\$ 1,358,700.00</b>	<b>\$ 325,100.00</b>
Contractor cost is based on \$67,900 assessed per acre of turf: (\$67,900/105 acres) = \$647/acre per year					

Based on this assessment, the cost of purchasing this equipment and performing the work with in-house staff is approximately \$16,255 per year, or \$325,100 over twenty (20) years. The cost of hiring a contractor to perform this work is approximately \$67,900 per year, or \$1,358,700 over twenty (20) years.

Staff recommends the purchase of an aerator and tractor and continuing the long term turf maintenance program outlined by Guise and Associates. Continued aeration not only relieves soil compaction, it increases the penetration of water, minerals, air and vital nutrients into the soil. In addition, aeration reduces many direct costs associated

with turf maintenance, such as irrigation water use, over-seeding and top-dressing with sand.

### **FISCAL IMPACT**

The cost of the aeration equipment and tractor was not included in the FY 2011/12 spending plan and a budget amendment of \$32,600 is required to the Parks Division (7800) for this equipment.

The City received a \$15,000 donation from the American Youth Soccer Organization (AYSO) to supplement the turf restoration program completed at Arroyo Vista Community Park earlier this year. This donation will help offset the requested funding for this equipment purchase.

### **STAFF RECOMMENDATION (ROLL CALL VOTE)**

1. Approve the purchase of an aerator and tractor for the Parks Division; and
2. Adopt Resolution No. 2011-\_\_\_\_ amending the FY 2011/12 budget to appropriate \$32,600 from the General Fund (1000) to the Parks Division (7800).

#### Attachments:

1. Resolution No. 2011 - \_\_\_\_\_.
2. John Deere 4720 Series Tractor and AerWay aerator

RESOLUTION NO. 2011-\_\_\_\_\_

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MOORPARK, CALIFORNIA, AMENDING THE FISCAL YEAR 2011/12 BUDGET TO ALLOCATE \$32,600 FROM THE GENERAL FUND (1000) TO THE PARKS DIVISION (7800) FOR THE PURCHASE OF A TURF AERATOR AND TRACTOR

WHEREAS, on June 15, 2011, the City Council adopted the Operating and Capital Improvement Budget for Fiscal Year 2011/12;

WHEREAS, a staff report has been presented to said Council recommending the need to purchase a turf aerator and tractor for various parks in the amount of \$32,600; and

WHEREAS, an additional appropriation of \$32,600 is requested from the General Fund (1000) to the Parks Division (7800) to fund the purchase of this equipment, and

WHEREAS, Exhibit "A" hereof describes said budget amendment and its resultant impact to the budget line items.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MOORPARK DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. A budget amendment allocating \$32,600 from the General Fund (1000) for the purchase of a turf aerator and tractor more particularly described in Exhibit "A" attached hereto is hereby approved.

SECTION 2. The City Clerk shall certify to the adoption of this resolution and shall cause a certified resolution to be filed in the book of original resolutions.

PASSED AND ADOPTED this 19<sup>th</sup> day of October, 2011.

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Janice S. Parvin, Mayor

Honorable City Council  
October 12, 2011  
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ATTEST:

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Maureen Benson, City Clerk

Attachment: Exhibit A – Budget Amendment

EXHIBIT A

BUDGET AMENDMENT FOR THE GENERAL FUND FOR THE  
PURCHASE OF A TURF AERATOR AND TRACTOR  
FOR USE IN VARIOUS CITY PARKS

FY 2011/12

FUND ALLOCATION FROM:

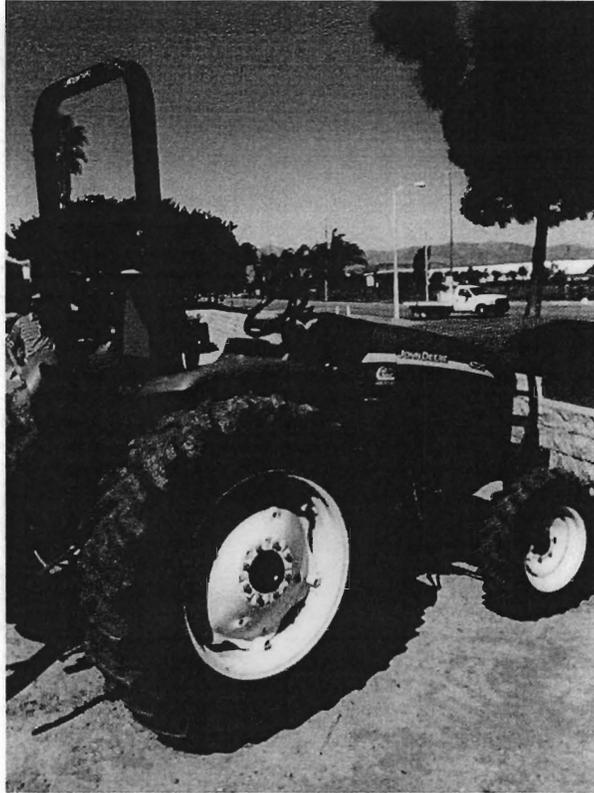
FUND TITLE	FUND ACCOUNT NUMBER	AMOUNT
General Fund	1000-5500	\$32,600
Total		\$32,600

DISTRIBUTION OF APPROPRIATION TO EXPENSE ACCOUNTS:

BUDGET NUMBER	CURRENT BUDGET	REVISION	ADJUSTED BUDGET
2400-7800-0000-9504	\$0	\$32,600	\$32,600
Total	\$0	\$32,600	\$32,600

Finance approval:





JOHN DEERE 4720 SERIES TRACTOR (USED WITH 1,100 HOURS)



AERWAY AERATOR (PURCHASED NEW)