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**DEPARTMENT OF PARKS
AND COMMUNITY SERVICES**

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March 26, 1991

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DIVISIONS:
GOLF
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HISTORY AND SCIENCE
METROPOLITAN ARTS
SACRAMENTO ZOO
PARKS AND RECREATION
• NORTH
• SOUTH
• CITY-WIDE

**Budget and Finance/Transportation and Community Development Committee
Sacramento, California**

Honorable Members in Session:

SUBJECT: Water Conservation Measures

SUMMARY

This report provides information regarding the Department of Parks and Community Services' efforts to comply with the City Water Conservation Ordinance. This report recommends that specific exemptions be made for irrigation practices necessary due to conflicts with heavy public use days or special events, for sanitation and or health reasons, for safety reasons or for essential horticultural practices. Specific locations are identified for these requested exemptions. Additionally, this report recommends the Department be authorized to embark on a continuing program of retrofitting irrigation controllers at specified locations with monies from Landscape and Lighting Funds per planning area. This program will be funded using a combination of monies designated for park emergency repairs and from monies remaining from any approved Landscape and Lighting project that is completed for less than the budgeted amount.

BACKGROUND

Overview:

The Department of Parks and Community Services is a major user of water at City facilities and in areas that are highly visible to the public. The Department is responsible for maintenance of 97 parks encompassing 1,620 developed acres, 530 acres of golf courses, and 47 miles of landscaped street medians. Some locations have automated irrigation systems which consist of 500 clocks which activate 5,800 valves which in turn activate approximately 46,600 sprinkler heads. Within this acreage are also approximately 5,000 non-automated heads which include impact heads, roller basins, bubblers, etc. Rarely do all these systems work properly all the time. Given the fact the some of these irrigation systems are old and inefficient and that a majority of sites do not have on-site personnel to supervise their operation, the Department will face complaints regarding water use. However, a good faith effort will be made to minimize the problems.

In a report to City Council dated June 1990, the department identified measures to conserve water and comply with the City Water Conservation Ordinance. Further water conservation measures for 1991 are:

- * No planting of summer annuals at any department facility or department maintained facility.
- * Delay tree planting in parks, medians or golf courses in areas that do not have existing irrigation systems

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until the drought is over. Trees will still be planted in front yards where the homeowner is responsible for watering.

* Every effort will be made to irrigate during nighttime hours. Mowing schedules will be adjusted to coincide with water saving irrigation practices.

* Drain the fountains on the K Street Mall and at Plaza Park. Although the K Street Mall fountain has recirculating pumps, litter accumulation requires the fountain be drained every few days.

* Delay until Fall 1991 the development of new landscaped street medians and new park projects. The following projects will be delayed as a result:

West El Camino median
Franklin Blvd. median
Consumnes River College Bowl
Sacramento Marina South Basin Landscaping
South Natomas Park
Mesa Grande Phase II

Staff has reevaluated the current water conservation measures and made further specific modification requests. Following narrative identifies specific exemptions by location.

Old Sacramento

Washing of sidewalks, driveway alley areas, and parking areas continues to be prohibited except as needed to alleviate sanitation hazards associated with horse-drawn vehicles and trash compactor areas.

Sacramento Zoo

All irrigation of gardens and turf areas comply with the Water Conservation Ordinance.

Hosing down walkways no longer takes place except to remedy a health or hazardous condition. Staff continues to hose down concession stand areas as required by the County Health Department. Many exhibits must be hosed down on a daily basis for sanitation reasons; however, every effort is made by staff to use as little water as possible and still maintain healthy, sanitary conditions for the species on exhibit.

Two exhibits that require a great deal of water, the hippo and elephant, were altered during 1990 and the practice continues. The hippo pool must be drained daily for the health and safety of the animal. However, the pool is filled only to half its capacity each day. The elephant trough previously had water flowing continuously and overflowing to prevent stagnation. Staff now fills the trough three times per day and there is no overflow. Three major water intensive exhibits - pelican pond, koi pond, and monkey island - have been removed through the renovation program. The newly opened tiger exhibit has one pond with a recirculating pump. Staff have been installing in many exhibits a device called "licks-it", which allows animals access to fresh water on demand, thus alleviating the need for a continuous fresh water flow. Staff is also looking into eliminating the need for running water in the round bird house.

Fairytale Town

Washing of paved surfaces continues only when needed to remove animal waste generated by geese and ducks. Alternative cleaning methods are used to clean moats, sidewalks and pathways. The upper and lower moats have been emptied and the concession water wheel is deactivated.

Parks and Recreation City Wide

Contract Maintenance Areas:

The Special Services Section of this division supervises six independent landscape contractors who maintain a variety of landscapes throughout the city including landscaped street medians, park strips, small park areas, and landscaping around facilities operated by the Divisions of Water, Sewer, Police, Solid Waste, Parking, and Library. Insofar as landscaped medians are concerned, there is an unmeasurable negative public impact any time water leaves the median and floods onto the street. Staff will make every effort to increase the frequency of watering cycles while decreasing the amount of time the water runs to minimize potential runoff. The watering schedule for the medians will be Tuesday, Thursday and Saturday between the hours of 2:00 a.m. through 5:00 a.m. In order to provide essential amounts of water to certain medians, Attachment I provides locations which will be watered Tuesday through Sunday, in the early morning hours.

There are numerous sites that have antiquated irrigation controllers. These controllers have no battery back-up. In the event of a power surge or power failure, the watering program is lost and the controller waters at any time, seven days per week for ten minutes per station. Attachment II identifies by priority, a list of medians that need to be retrofitted with battery back-up controllers and the associated cost. In the event of power loss, this battery back-up causes the controller to irrigate according to its current program. When power resumes, the program continues without interruption. This ensures irrigation will continue to occur in the nighttime hours.

Tree Services:

Tree Services is responsible for the care of the street tree population and the city nursery. Container plants at the nursery must be watered on a daily basis to prevent wilting and plant loss. Staff also provides truck watering of young street trees at various locations throughout the city. In order to reach all young trees in need of watering, a five day or Monday through Friday, 6:00 a.m. through 2:00 p.m. watering schedule is necessary. Staff will work with the Water Division in identifying and using a non-potable water source for irrigating the trees. Signing will be provided for these vehicles to indicate the use of reclaimed water. Organic mulch, derived from wood chips, will be used in tree wells to conserve soil moisture and suppress weeds.

Parks and Recreation North and South

Both North and South regions have been upgrading their park's irrigation systems. This plan continues and will result in the highest degree of water savings. In midyear 1990, \$70,000 was provided in emergency funding for retrofitting and upgrading irrigation systems. Following are parks that had older sprinkler heads replaced:

North Region

Johnston
McKinley

South Region

Susan B. Anthony
Max Baer
Sim Park
Argonaut

There is also a need in some parks to replace antiquated irrigation controllers with modern battery back-up electronic controllers, alleviating the potential problems power failures may cause. Attachment III represents a list of parks in the north and south regions, including the Zoo, that are in need of controller retrofitting with the associated costs.

As part of the 1990 water conservation plan, the department ceased tennis court washing at all sites with the exception of McKinley Park. Due to the high use of these courts, staff has been washing them down twice per month. It is recommended that this practice be further reduced to one time per month.

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Washing down of other hard surfaces such as areas on the K Street Mall, behind various backstops, and under bleachers will continue only as needed for sanitation purposes.

High Traffic Parks:

Due to heavy weekend use of some parks, it is impossible to apply adequate irrigation to sustain the turf areas. Following locations are requested to be exempted from the Monday prohibition of watering - no afternoon watering will occur:

North Region

Southside
McKinley
East Portal

South Region

William Land

Ballfields:

There are numerous parks that have skinned softball fields or dirt hardball diamonds. Due to their heavy use, frequency of field preparation, and for general safety reasons, exemptions from Monday watering prohibition as well as 12:00 p.m. through 6:00 p.m. watering ban are requested for the ball diamond portions only at the following sites:

North Region

Renfree Field
Dixianne
Redwood
Northgate
Stanford

Johnston
Ninos
Robertson
Grant
Hagginwood

Sacramento Softball Complex
Roosevelt

South Region

Lawrence
Colonial
Sim
McClatchy

Tahoe
Reichmuth
William Land (one field)

Pools and Lakes:

Staff has examined the issue of wading pools. There are eighteen wading pools at various parks throughout the city. Wading pools that operate in conjunction with an existing swimming pool use the same filtration system as the pool; therefore, a constant filtered water supply is present. However, other wading pools have to be drained and filled on a daily basis when in use. Staff recommends that most wading pool programs continue as planned and that four wading pools located at Chorley, Colonial, Hopkins, and Warren Parks be closed due to low attendance. Wading pools at Muir and Baer Parks are currently closed.

William Land Park, McKinley Park and Southside Park all have large lakes that contribute to the aesthetic value, visual appeal, and recreation use of the facility. Although one lake in William Land Park does have recirculating pumps, the other lakes must have water manually added from time to time due to evaporation loss and to maintain the quality of water for the fish. The lake at Southside Park fluctuates with the rise and fall of the Sacramento River. Staff recommends that these lakes remain status quo for the time being. If further water conservation measures are needed, then this topic will be explored.

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Golf

The Golf Division is in its ninth year of the ten-year master plan to convert all City golf courses to computerized automatic irrigation. The purpose of this master plan is to conserve a minimum of 30% of the water requirements of the turfgrass.

At the Bing Maloney facility, the Executive 9 course is fully automated and controlled by a central computer. Currently a project will soon commence to install automated satellite controllers on the 18-hole course. All irrigation of greens and tees will then be linked with the central computer. Ultimately, the manual irrigation systems on the fairways will gradually be automated and connected with this system. All greens and tees on the Haggin Oaks South Course as well as six of the nine holes at William Land golf course are fully automated and monitored for efficient use of water.

Due to the unique horticultural requirements of growing specialized turfgrass primarily on putting greens, and due to the overall heavy use of the facilities, it is requested that the golf courses be exempt from both the Monday watering prohibition and the restricted afternoon watering period. During the afternoon hours, only hand watering of greens and tees will be allowed. The lake at Bing Maloney on the #3 hole will be drained for water conservation since it does not hold water and must be continually refilled.

Future Direction:

The highest long term savings of water can be obtained by placing irrigation water on landscapes in the most efficient and effective manner. Staff is analyzing the potential of centralized irrigation for all landscaped areas. There are two distinct advantages to centralized irrigation - saving water and saving labor. First, saving water is achieved by more efficient irrigation practices. Irrigation is based on the needs of the plants, the infiltration rate and moisture content of the soil, the evapotranspiration rate of the atmosphere and the precipitation rate of the sprinkler heads. Trained personnel only will program, monitor, and change the irrigation programs. Immediate program changes to all irrigation controllers throughout the City may be made quickly from one location if unexpected rain or extreme heat occurs. These systems can also detect leaks or improperly operating valves and immediately shut off water at a problem area.

Second, centralized irrigation saves labor in several respects. Irrigation programming and changes are performed at one location, saving trips to numerous sites. Reports are generated from the central unit informing maintenance personnel where and when watering problems have occurred. Maintenance personnel may then go directly to the area in need of repair, eliminating time-consuming troubleshooting. The system can also control the operation of additional functions such as lighting, fountains, pumps, gates, etc.

Centralized irrigation requires significant initial capital expenditure. In the long run, these systems provide the most efficient use of a valuable and scarce resource - water.

Education:

The department has identified two major roles in the education process of conserving water - education of the public and training of staff. These two key elements will be approached through a demonstration garden and by in-service training sessions.

Demonstration Garden:

As a means of educating the public on landscaping alternatives, the Department in cooperation with the Water Division, Public Works Department, is in the process of planning a xeriscape demonstration garden on the K Street Mall at 11th Street between "J" and "L" Streets. The target date for completion of this garden is September 1, 1991.

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Staff will work with a renowned expert in the field of xeriscape in designing and constructing this garden. Staff will report back with plans, specifications, and cost estimates prior to initiating the project.

Xeriscape is the art of landscaping for water conservation. Traditionally, green belts have played an important role in our culture. From the earliest times, towns and cities were designed with common green areas in the center. As a society, we have come to equate beauty and relaxing areas with expanses of turf. However, many traditional turfgrass species require large amounts of water for vigorous growth. In past eras of abundant water, little consideration was given to the high water use of this specific design element. Recognizing that we live in a semi-arid desert region, it is time to re-think the function and purpose of landscaped areas. Xeriscape is the systematic step-by-step approach of creating a low-water requiring, yet beautiful landscape. Depending on specific landscape elements, water savings of 30% to 80% can be achieved. Critical elements in the xeriscape process include planning and designing the area based on its function, limiting turf areas, using efficient irrigation, improving soil qualities, using mulches, specifying low-water demanding plants and using appropriate maintenance practices. Educational signing will be found throughout this garden to explain the design techniques used in the garden. The demonstration garden will provide an excellent opportunity for the city to visually show the Sacramento community the attributes of a water conserving landscape in the view of the State Capitol.

In-service Training:

Staff will develop and conduct comprehensive in-service training sessions for field staff focusing on the proper setting and adjusting of irrigation controllers, determining where problem areas exist, and formulating a corrective plan. In conjunction with the Water Division, landscape water audits will be conducted as a means of evaluating current irrigation practices and determining where water savings are possible. Training will occur with field staff as well as city independent contractors with the support of management.

Public Image:

The department will take steps to ensure that appropriate signing is displayed to communicate our efforts towards water conservation. For example, water trucks using reclaimed water will have signs that indicate the water source. Lakes with recirculating pumps will be signed as such. Areas where landscaping is delayed due to the drought will have signing that indicates this. Drained fountains will have signs that indicate they were drained for water conservation.

A second element of public image will be the continuation of the Parks & Recreation City Wide Manager being the primary contact for department water complaints. During the 1990 season, the department received approximately 167 complaints regarding water use. Problems will be identified and resolved in an expedient manner.

FINANCIAL DATA

It is recommended that the Department of Parks and Community Services be authorized to embark on a continuing program of retrofitting irrigation controllers with monies from Landscape and Lighting Funds by planning area. This program will be funded using a combination of monies designated for emergency park repairs and from monies remaining from any approved Landscape and Lighting project that is completed for less than the budgeted amount. It is estimated this program will cost \$124,720 for locations throughout the City as specified on Attachments II and III.

POLICY CONSIDERATIONS

Failure to correct deficiencies in the current irrigation systems would result in wasted water, shutting down of irrigation systems, poor appearance of landscapes, poor public relations, and in general, violation of the adopted Water Conservation Ordinance.

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MBE/WBE EFFORTS

Every effort will be made to conform with the City's MBE/WBE goals.

RECOMMENDATION

It is recommended that the Budget and Finance/Transportation and Community Development Committee approve this report and forward it to the full City Council for action. Further, it is recommended that City Council, by resolution:

1. Authorize the Department of Parks and Community Services to water selected parks, landscaped areas and golf courses as specified in this report, and;
2. Authorize the Department of Parks and Community Services to embark on a continuing program of retrofitting irrigation controllers with monies from Landscape and Lighting Funds by planning area. This program will be funded using a combination of monies designated for emergency park repairs and from monies remaining from any approved Landscape and Lighting project that is completed for less than the budgeted amount. It is estimated this program will cost \$124,720 for locations throughout the City as specified on Attachments II and III.

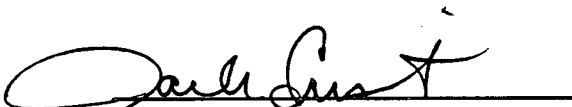
Respectfully submitted,



KEN HARRIS, Parks & Recreation Manager - City Wide

Recommendation Approved:

Approved:



JACK R. CRIST
Deputy City Manager



ROBERT P. THOMAS, Director
Parks and Community Services

Contact Person: Ken Harris, Parks and Recreation Manager - City Wide - 449-5384

BT:bt

April 16, 1991

All Districts

RESOLUTION NO.

ADOPTED BY THE SACRAMENTO CITY COUNCIL

ON DATE OF _____

**RESOLUTION APPROVING DEPARTMENT OF PARKS AND COMMUNITY SERVICES'
WATER CONSERVATION PROGRAM AND AUTHORIZING THE USE
OF LANDSCAPE AND LIGHTING FUNDS FOR IRRIGATION
CONTROLLER RETROFITS**

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

1. That the Department of Parks and Community Services' Water Conservation Program is hereby approved and specific exemptions are granted.

That the Department of Parks and Community Services is authorized to embark on a continuing program of retrofitting irrigation controllers with monies from Landscape and Lighting Funds by planning area. This program will be funded using a combination of monies designated for emergency park repairs and from monies remaining from any approved Landscape and Lighting project that is completed for less than the budgeted amount. It is estimated this program will cost \$124,720 for locations throughout the City as specified on Attachments II and III.

MAYOR

ATTEST:

CITY CLERK

FOR CITY CLERK ONLY

RESOLUTION NO: _____

DATE ADOPTED: _____ 8

ATTACHMENT I

Contract Maintenance Exemption List - Tuesday through Sunday Watering

Capitol Mall
Crescent Park
Exposition Blvd.
Franklin Blvd.
Fruitridge R/R
Howe Ave.
J St. Subway
La Riviera
Laguna Creek
Mack Road
Northgate Island
Riverside I-5
Riverside - Pocket
Sierra Vista
Sunset
North Point
West El Camino
3rd Street
21st Street
22nd Street
24th Street median and bypass
Oak Park Business Strip
21st Avenue

ATTACHMENT II

Contract Maintenance Irrigation Controller Replacements

| <u>PRIORITY</u> | <u>LOCATION</u> | <u>COST OF NEW CONTROLLERS</u> |
|-----------------|--------------------------|--------------------------------|
| 1. | Exposition Blvd | \$ 350.00 |
| 2. | 21st Street | 350.00 |
| 3. | 22nd Street | 350.00 |
| 4. | 21st Ave & Perry | 600.00 |
| 5. | West El Camino | 530.00 |
| 6. | Riverside (Pocket) | 1,660.00 |
| 7. | Mack Rd | 1,980.00 |
| 8. | Center Parkway | 700.00 |
| 9. | Capitol Mall | 230.00 |
| 10. | Riverside (I5) | 650.00 |
| 11. | 14th & O | 230.00 |
| 12. | Oak Park Business Strip | 3,710.00 |
| 13. | 65th St. Expressway | 1,050.00 |
| 14. | Franklin Blvd | 260.00 |
| 15. | Sierra Vista (T ST) | 350.00 |
| 16. | Sunset (T ST) | 300.00 |
| 17. | 21st St. & FReeport | 230.00 |
| 18. | Northgate Island | 300.00 |
| 19. | Village Garden (Natomas) | 900.00 |
| 20. | Crescent Park | 600.00 |
| 21. | Fruitridge (R/R) | 450.00 |
| 22. | R Street (3RD TO 9TH) | 350.00 |
| 23. | Fair Oaks Blvd | 230.00 |
| 24. | Florin (I5) | 530.00 |
| 25. | Harvard St | 230.00 |
| 26. | Riverside (Clipper) | <u>1,200.00</u> |
| | SUBTOTAL | \$ 18,320.00 |

ATTACHMENT III

Parks and Recreation North and South Region, Zoo Division

Irrigation Controller Replacement List

NORTH REGION

COST OF NEW
CONTROLLERS

| | |
|------------------------------|-------------|
| Strawberry Manor | \$ 1,400.00 |
| Glenwood | 2,800.00 |
| Del Paso Heights School Park | 2,800.00 |
| Hagginwood | 8,400.00 |
| Babcock School Park | 2,800.00 |
| Bell Ave. School Park | 1,400.00 |
| Castori School | 1,400.00 |
| North Ave. School Park | 1,400.00 |
| Robla School Park | 1,400.00 |
| Renfree Field | 2,800.00 |
| Dos Rios School | 1,400.00 |
| Ok | 8,400.00 |
| Glenbrook | 4,200.00 |
| Glen Hall | 5,600.00 |
| East Portal | 8,400.00 |
| Henschel | 1,400.00 |
| Coloma | 1,400.00 |
| Southside | 8,400.00 |
| O'Neil | 1,400.00 |
| McKinley | 2,800.00 |

SUBTOTAL \$ 70,000.00

SOUTH REGION

| | |
|---------------------------|----------|
| Argonaut | 2,800.00 |
| Camellia | 1,400.00 |
| Tahoe | 9,800.00 |
| Temple | 1,400.00 |
| Curtis | 9,800.00 |
| Fourth Avenue | 1,400.00 |
| Oak Park Community Center | 1,400.00 |
| Wood | 2,800.00 |

SUBTOTAL \$ 30,800.00

ZOO DIVISION

SUBTOTAL \$ 5,600.00

| | |
|----------------|--------------|
| Contract Areas | \$ 18,320.00 |
| North Region | 70,000.00 |
| South Region | 30,800.00 |
| Zoo | 5,600.00 |

TOTAL \$ 124,720.00