



Agenda Date: 5/18/09

Agenda Item: 5(a)

Approved:

  
Gary A. Napper  
City Manager/Executive Director

# AGENDA REPORT

**TO:** HONORABLE MAYOR AND COUNCILMEMBERS  
**FROM:** Maintenance Supervisors  
**DATE:** May 5, 2009  
**SUBJECT:** Water Conservation Plans for City Facilities and Public Landscaping

---

## RECOMMENDATION

It is recommended the City Council review and adopt, by minute motion, the proposed Water Conservation Plan outlined in the attachments to comply with the water rationing regulations set by the Contra Costa Water District (CCWD) in their drought management plan adopted on April 1, 2009.

## BACKGROUND

On April 1 2009 the Contra Costa Water District instituted district-wide mandatory water rationing for all water users within the District starting on May 1, 2009. This action comes after two dry years that has reduced the amount of water available to the Contra Costa Water District. The District indicates it must cut water usage by an average of 15% district-wide this year. As a subscriber to CCWD metered water, the City of Clayton falls under two categories of water rationing established by the CCWD.

The first water rationing plan is for cutting water consumption by 15% in all City buildings and facilities by taking the usage in the years 2005, 2006, and 2007 and averaging that use to come up with a base line amount. The year 2008 was left out since the District had asked for volunteer rationing in that year.

The second rationing plan the City falls under is for irrigated landscaping. They are asking for a 45% cut back in consumption using the same formula as above with the same years of 2005, 2006, and 2007 to establish a base line of usage.

## **RATIONING PLANS**

The 15% cut in water consumption for buildings will effect the following City owned facilities; City Hall, Library, Endeavor Hall, The Grove Park (bathrooms, drinking faucets, and water feature), and Community Park (bathrooms, and drink fountains). How the cuts will work is taking the three year usage of 2005, 2006, and 2007 and averaging these years. As an example: let's say that City Hall has used an average over the three years period of 100 gallons a day in water. The Water District is asking the City to cut its usage at City Hall to 85 gallons a day (100 gallons a day minus 15% or (15 gallons) equals 85 gallons a day). The City still can use up to but can not exceed the three year average of 100 gallons a day. If we were to go over the average daily usage reported by the Water District then a monetary penalty rate of 4 times the cost of the standard cost of water would be imposed.

The 45% cut in water consumption for irrigated landscape will affect the following owned properties: all Clayton Maintenance Landscape District property, City Hall landscape, Endeavor Hall landscape, Community Park, North Valley Park, Stranahan Park, and The Grove Park. The Library, Westwood Park, and Lydia Lane Park are not included because they are irrigated by well water. There are two ways the water allocation can be determined for City landscape irrigation. The first method is the same as above on using the average of past usage from the same years of 2005, 2006, and 2007 and cutting this amount by 45%. As an example let's say the Community Park uses 10,000 gallons of water a day on average. The Water District is asking for a 45% cut back from past consumption which would be a daily rate of 5,500 gallons a day (10,000 gallons a day minus 45% or 4,500 gallons equals 5,500 gallons a day).

The second formula for calculating landscape water usage is using ET (evapotranspiration) historical rate. This is essentially taking the amount of water it takes to water an acre of landscaping by historical data that has been compiled over the same three year period. An example would be for a set acre of landscaping in Clayton in the month of July would need 10 inches of water for the one acre of landscaping to survive from the historical data. So taking this ET rate of 10 inches the Water District would cut it by 45% or allocate the City 5.5 inches of water for the month of July (10 inches a month minus 45% or 4.5 inch equals 5.5 inches of water for July). Staff is still looking into what method of calculating our water allotment would be more beneficial to the City. At this time it looks like using the ET rate would give us a bigger allotment for watering, at least in the Landscape Maintenance District. On the Park side it looks to be more beneficial to use our past usage to get a better allotment for the City.

Under the CCWD rationing plan, large users like the City of Clayton can use what is called 'pooling' of our water meters. Essentially what the City can do is take all of our water meters that are in the Landscape District and combine them into one large pool. Or do the same with other water meters within the City. This gives the City some discretion in the City's water usage and where it is applied instead of only being able to use the allocated amount of water from each meter at that meter's location. An example would be is if we have three meters labeled X, Y and Z, and X was allocated 1,000 gallons a day, Y 2,000 gallons a day and Z 200 gallons a day. When we pool these meters together our total allocation

becomes 3,200 gallons a day from all three meters. Suppose we wanted to save the plants that meter Z waters but it would take us 700 gallons a day to be able to do this. As you can see if we cannot pool the meters (3,200 gallons total) we would go over by 500 gallons a day at meter Z (200 gallons allocated, 700 gallons needed equal 500 gallons short), which would then incur a substantial penalty of four times the standard rate of water charged by CCWD. By pooling the water meters we lessen the likelihood of any penalty since we stay within our pooled allotment (3,200 gallons). To continue this example: let's say meter Y needs its full 2,000 gallons of water and meter X does not need any water. In this example we would have an actual surplus of 500 gallons of water to use and not be penalized like we would if the meters were kept separate.

The Contra Costa Water District has made it clear that if any users in the District continually waste water under this rationing plan (i.e. goes over their allotment continually and absorbs the monetary penalty), the District will shut the water off to that user. It is essential that the City stays within its allocated water amounts so our water service will not be interrupted, and that the City sets the proper leadership example to our community.

The proposed plans attached for each category of City water use should be able to meet the goals set by the Contra Costa Water District.

### **FISCAL IMPACT**

The fiscal impact is unknown but there is the potential of monetary savings in water costs if the City meets the required goals. Certainly, meeting the imposed reductions also saves the City from substantial monetary penalties ready to be levied by CCWD.

The Landscape Maintenance District alone spent \$169,146 for water in last year's budget (FY 07-08). If these reductions continue for one full year, based on past usage the savings to the Landscape District in water alone could be as high as \$76,155. Naturally, any water expense savings will be offset by the probable loss or damage to public landscaped areas and turf, necessitating future replacement costs.

## CITY BUILDINGS WATER RATIONING PLAN

To achieve the Contra Costa Water District's 15% mandatory reduction in water usage the following objectives will be implemented to meet this goal.

### Objectives

- Read all City Building meters every month
- Manually adjust controllers for watering cycles in Landscape area
- Suspend trimming of the landscape around buildings during rationing
- Install signage asking people to conserve water

### Purpose

- I. Maintenance personnel will read the water meters every month to ensure that we are meeting our goals of a 15% reduction in water usage overall in buildings and 45% in a building's landscape. The following buildings will be monitored: City Hall, Library, and Endeavor Hall. Endeavor Hall and City Hall are the only buildings with dedicated water meters to irrigate the landscaping, which must achieve an overall 45% reduction in water usage. The Library landscape is water provided by well water and therefore it has no restrictions. There will be a small addition use in man hours to perform this job in the General Fund and Endeavor Hall Fund but these addition man hours should be off set from using less man hours trimming and from using/buying less water
  
- II. The controllers in the building landscape will be manually programmed throughout the water season to meet our goals of a 45% overall water reduction. Instead of a standard program that runs throughout the watering season we will be making adjustment to the controllers on an as-need basis. This could mean daily or weekly or monthly. There will be additional man hours incurred since we will be doing some more manual adjustments than in a normal watering year. These additional man hours will be off set from the suspending of the trimming and from using/buying less water for the building landscape.

- III. Maintenance personnel will suspend trimming of building landscape during the summer and fall months. By taking this action we will save water by not promoting the plant to re-grow after they are trimmed especially during the hot summer months. Trimming will be done on a case by case basis for the following reasons: overgrowth impeding walkways, and any other hazard found to endanger the public. Trimming will not be performed for aesthetic reasons during this time so as to save and conserve the plants during drought conditions.
  
- IV. Signage will be installed to ask citizens to please conserve water at City Hall, Library, and Endeavor Hall. Signage will also be installed informing the public that the Library grounds are irrigated by well water and is therefore not restricted by drought rationing.

### **Summary**

All of the City's Buildings have newer construction employing water saving devices installed such as low flow toilets and auto shut off faucets. The rock fountain in the City Hall courtyard operates using recirculating water.

As mentioned above, signage will be installed to alert the public of the need to conserve water. Staff believes the 15% reduction in water use can be met for the buildings. If the goals are not being met, Staff will look into shutting off faucets or as a final drastic measure, close the public restrooms.

## **CITY OF CLAYTON PARKS WATER RATIONING PLAN**

To achieve the Contra Costa Water District's 45% mandatory reduction in water usage the following objectives will be implemented to meet this goal.

### Objectives

- "Pool" all water meters funded by the General Fund
- Read all Parks water meters every two weeks
- Reduce watering of turf areas
- Turn off sprinklers in planted areas (except The Grove park)
- Manually adjust controllers for watering cycles
- Suspend trimming of the landscape areas during rationing
- Install signage for the public to conserve water

### Purposes

- I. The Parks have a total of eight water meters with six of the meters coming under the General Fund and the remaining two are under The Grove Park (funded by restricted-use monies). Of the six meters that fall under General Fund, one comes under Buildings (Community Park bathrooms and drinking fountains) and only needs a 15% reduction in water usage. The other five meters will be "pooled" and must achieve an overall 45% reduction in use. The meters are at the following location; two meters at the Community Park, one at North Valley Park, one at Stranahan Park, and one at Dog Park. These five will be pooled together to give us flexibly to attain our goal of 45% reduction in water usage.

The two remaining meters are at The Grove Park; one is for irrigation of the landscaping which falls under the 45% reduction and the other is Buildings which cover the public bathrooms, drinking fountains, and water play feature. That meter will need to meet a 15% reduction in usage. The Grove Park meters will stand alone since they come under a different funding source (restricted monies).

- II. Maintenance staff will read the water meters every two weeks to ensure that we are meeting our goals of a 45% reduction in water usage overall in the landscape areas and 15% for the buildings. With the General Fund meters (Parks) pooled together we will be better able to see if we are keeping within our total allotment; if we're not meeting our goals then make adjustments quickly to meet our goals within these areas. There will be additional man hours to perform this job but this time will be offset from suspending trimming and less mowing (grass will not be growing in some areas and slow down from less water being used in other areas) and from buying/using less water
  
- III. Maintenance staff will limit watering of the turf areas within each Park, which will undoubtedly make the turf less attractive to the public. The plan at the Community Park is to try and keep the sports fields playable during the summer and limit or cut off the watering around the outside of the fields and picnic areas. At North Valley Park we will try and keep an area green around the play structure and flat areas of the Park. Stranahan Park we will try to keep the turf alive (this is a small lawn and should have limited water usage.  
  
The other two Parks not mentioned are Westwood Park and Lydia Lane Park. Both of these parks are on well water and therefore are not subject to the Water District's restrictions on watering.
  
- IV. To save large turf areas for sport play use we will be turning off water to the plant areas at the Community Park and North Valley Park (we will still water shrubs at The Grove Park and Stranahan Park but at a much lower level). Most of the trees and shrubs will survive through the hot summer months with the ground cover probably dying out. If we exceed our goal in water reduction during the summer we will water the shrubs and trees when possible.

- V. The controllers will be manually programmed throughout the water season to meet our goals of a 45% overall water reduction. Instead of a standard program that runs throughout the watering season we will be making adjustment to the controllers on an as-needed basis. This could mean daily or weekly or monthly. There will be an additional man hours doing this job since there will be a lot more adjustments then in normal watering years. This will be offset from other labor savings during the drought such as less mowing, trimming, and savings from buying/using less water.
- VI. Maintenance will suspend trimming the landscape during the summer and fall months. By taking this action we will save water by not promoting the plant to re-grow after they are trimmed especially during the hot summer months. Trimming will be done on a case by case basis for the following: sight obstructions at intersections, overgrowth impeding walkways, and any other hazard found to endanger the public. Trimming will not be performed for aesthetic reasons during this time so as to save and conserve the plants during drought conditions.
- VII. Maintenance staff will install signage in the Parks by public restrooms and drinking fountains urging citizens to please conserve water. In Lydia Lane Park and Westwood Park, signs will be installed informing citizens these Parks use well water and are not restricted by water rationing regulations of the Contra Costa Water District.
- VIII. Turf areas lost during the drought will be examined for reseeding or replacement. Costs to replace lost landscaping will be developed and considered for General Fund allocations in relation to other competing priorities of the City during the extended budget crisis and economic downturn.

## Summary

During the rationing Maintenance staff will be responding and repairing all leaks as they are detected so as to conserve as much water as possible. Public restrooms at the parks all use low flow toilets and self shut off faucets to save water. If there becomes a problem with over usage for domestic water (15% cut back) staff will look into shutting off faucets and as a last resort shutting down the bathrooms. At The Grove Park maintenance staff is looking into the feasibility and cost to use well water to water the park landscaping. Adjustments to the above plan may need to be made throughout the year to meet our water reduction goals.

## LANDSCAPE MAINTENANCE DISTRICT WATER RATIONING PLAN

To achieve the Contra Costa Water District's 45% mandatory reduction in water usage the following objectives will be implemented to meet this goal.

### Objectives

- "Pool" all water meters within the Landscape District
- Read all Landscape District meters every two weeks
- Stop watering all lawn areas
- Turn off sprinklers in bare areas
- Manually adjust controllers for watering cycles
- Concentrate watering on newer and healthier planted areas
- Suspend trimming of the landscape during rationing
- Suspend planting of annuals at base of Clayton Fountain and along Main Street
- Option to drain the pond at the Clayton Fountain
- All District monies saved from using less water stay within the District's Fund and will be set aside for future water system improvements or restoration of turf areas or plants lost to the drought

### Purposes

- I. The Landscape District will "pool" all 43 water meters within the District so we can better achieve the overall 45% reduction in water usage. This allows us to divert water from metered locations where the water is not needed to areas that will need the water so we will be able to save the desired landscaping (see criteria below VI). Implementing meter "pooling" will allow the Maintenance Department more flexibly in attaining our goal of 45% water reduction mandated by the Water District.
- II. Maintenance staff will read the water meters every two weeks to ensure that we are meeting our goals of a 45% reduction in water usage over all. With the meters pooled together we will be better able to see if were keeping within our total allotment and if not make adjustments quickly before heavy penalties apply. There will be addition man hours to perform this job but will be offset from man hour saving from suspending trimming and from buying/using less water

- III. Maintenance staff will stop watering all turf area funded by the Landscape District. These areas are: Water Feature, Coal Mine Court, Peacock Creek Drive, Eagle Peak Ave and Indian Wells Way at both ends, Eagle Peak Ave at Miwok Way, Indian Head Way, Downtown at the off ramp, Tear Drop (where roses are), Christmas tree and above Black Diamond Plaza

Lawns are by far the largest user of water in a landscape. By not watering them we will be able to divert water to save shrubs and tree which are more costly to replace than lawn. An added benefit of not watering these lawns is when the drought is over we will be able to make upgrades to the sprinkler systems and get new thatch free turf. This will make watering much more efficient and make for healthier lawns in the future.

- IV. Maintenance staff will be going through the landscape and shut off individual sprinkler heads that are only watering dirt areas. This has already been done in most areas where we have experienced major plant loss over the years. There will be a small add cost in man hours since we will be checking for this throughout the year instead of just at the beginning of the watering season as in previous years.

- V. The irrigation controllers will be manually programmed throughout the water season to meet our goals of a 45% overall water reduction. Instead of a standard program that runs throughout the watering season we will be making adjustment to the controllers on an as-needed basis. This could mean daily or weekly or monthly. There will be additional man hours needed since we will be doing a lot more adjustments than in normal watering years. These additional man hours will be absorbed from savings from suspending the landscape trimming and buying/using less water.

- VI. Maintenance staff will be making an evaluation of all the landscaping plantings to determine what plants would be most cost and water effective for saving. The priority will be to save the newer and healthier landscape areas such as: Center Street trail area; old Marsh Creek Road; east bound side of Oakhurst Drive. Then, priority in order will be to save trees, shrubs, then lastly any ground cover (listed in order of cost priority and aesthetic impact).

- VII. Maintenance will suspend trimming the landscape during the summer and fall months. Under the standards of the Landscape District we trim the landscaping twice a year. By suspending trimming for the summer and fall we will be only trimming the shrubs an average of once a year during the declared drought period. By taking this action we will save water by not promoting the plant to re-grow after they are trimmed especially during the

hot summer months. Trimming will be done on a case by case basis for the following reasons; sight obstructions at intersections, overgrowth impeding walkways, and any other hazard found to endanger the public. Trimming will not be performed for aesthetic reasons during this time so as to save and conserve the plants during drought conditions.

- VIII. Maintenance will suspend the planting of annual flowers at the Clayton Fountain and at the tear drop on Main Street. We will also inform the Garden Club that there will not be sufficient water to be able to water the raised planter boxes along Main Street and Center Street that they maintain with annual color. This is being done because annuals use almost as much water as lawn areas.
  
- IX. As an option to save more water the Landscape District may have to drain the Clayton Fountain and put the pumps into storage. Maintenance staff will monitor this during the summer months and if we are not meeting the imposed 45% goal for water savings, then we will have to take this option. This water feature is like a swimming pool where water is being added all the time from evaporation and recirculation of the filter pump. The water feature is not metered separately from the nearby landscape so there is no accurate way to measure what it uses daily. If the water feature were to be shut down the pumps would need to be serviced to put them into storage while the feature is drained. This would allow the pumps to stay in operational condition until the time when the District turns the Fountain back on. There will be some cost to put the water feature into storage and restart. Overall there would be savings from the monthly maintenance contract which would be suspended and water usage.
  
- X. All monies saved from purchasing less water after added labor costs to implement the above plan remain within the District's restricted-use Fund and are proposed to be set aside for future uses; irrigation efficiency improvements, plant replacement from the drought, and hardscape installation for less watering in the future within the District. After the drought restrictions are lifted, Maintenance Staff will compile a list of projects to implement with the funding available for the Trails and Landscaping Committee to review and recommend to the City Council. It is unknown at this time what the amount of monies would be saved from less water usage but it could be substantial if the drought lasts multiple years.

## Summary

During the rationing the Maintenance staff will be responding and repairing all leaks as they are detected so as to conserve as much water as possible. Also WAP (work alterative personnel) will be employed in areas where hand watering may be more efficient to save trees or shrubs then using the existing irrigation systems. Adjustments to this plan may be made throughout the year to achieve the goal of 45% reduction on water usage and at the same time save as much of the plant life as possible.