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MEMORANDUM

CWS File #11-240

To: Taryn Hutchins-Cabibi, CWCB
From: Kim Frick
cc:
Date: February 2, 2012
Subject: 50% Progress Report for Town of Firestone Drought Management Plan

Clear Water Solutions (CWS) is assisting the Town of Firestone with developing a Drought Management Plan (DMP) in accordance with State regulations following the Guidance Document produced by the Colorado Water Conservation Board. The Guidance Document outlines eight steps in the drought management planning process, of which the Town has completed through Step 5.

We have completed three stakeholder meetings, including a good discussion of our draft drought stages during our last meeting. We have received very valuable input from Town staff and have developed a draft memo to distribute to the Town Board for their input as well. Once we obtain Town Board input, we will develop our final staged drought response program (Step 6).

We propose a water supply index (WSI) to be used as a trigger for our various drought stages that are attached to this memo. For many municipalities, water supplies fluctuate as water is brought in by developers before the subdivisions are built. To address this variability, we developed a WSI that considers the Town's water supply versus demand. This index, which factors in both supply and demand to account for growth, will be evaluated on an annual basis.

Water Supply Index =

$$\frac{\text{Supply}}{\text{Demand}} = \frac{\text{Carryover}_{(\text{last})} + \text{CBT Quota} * \text{No of CBT Units}}{\text{Demand} * 130\% + \text{Carryover}_{(\text{next})}}$$

The inputs for supply are the CBT carryover from last year plus the number of CBT units the Town owns multiplied by the current year's CBT quota. The inputs for demand are the estimated demand for the past year plus 10% for growth and 20% surcharge for Central Weld (30% total) plus the estimated carryover for next year. The carryover is estimated as 20% of the CBT units currently owned by the Town.

The four stages of drought are shown in the following table. The first level is a "Sustainable" level, which incorporates the on-going water saving practices by the Town

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and water customers. The trigger for this stage is a WSI over 110%, which typically corresponds to a 70% CBT quota, depending on the actual demand and supplies for the Town for any given year. An example of an on-going measure is working to reduce the water use at the Town Parks by conducting irrigation water audits and increasing Xeriscape areas.

Drought Stage	Water Supply Index	Water Savings Goal
Sustainable Level	>110%	None
Warning	101 – 109%	10%
Critical	90 – 100%	10-20%
Emergency	< 90%	30+%

The second stage is a “Warning” level in which the supplies are reduced but still greater than the demand. The trigger for this stage would be a WSI = 101 to 109% with a water savings goal of 10%. This typically corresponds to a 60% CBT quota, again depending on actual supplies and demands in the future. During this stage of drought, the Town begins to get in place actions that should be ready to implement should the next stage of drought occur, such as leases with other entities, etc. Mandatory three-day-a-week watering restrictions will be implemented for HOA’s and business customers.

The third level of drought is a “Critical” level in which supplies have fallen below demand and the trigger is a WSI = 90 – 100%, which typically corresponds to a 50% CBT quota (depending on actual supplies and demands). This is a serious stage of drought in which the Town will continue to evaluate leasing additional water from farmers and other entities and potential trades of non-potable supplies for treatable water (i.e. CBT). Mandatory two-day-a-week watering restrictions will be implemented for all water customers (residential, business, HOA’s). Irrigation of new sod and irrigation will be allowed by permit only. Irrigation of Tier 2 Town Parks will be restricted. Car washing will only be allowed at commercial car washes that use recirculation techniques. The Town would consider implementing a drought surcharge or rate increase to further encourage water conservation and cover costs.

The last stage of drought is the “Emergency” level in which the WSI is anything less than 90%, which typically corresponds to a 40% CBT quota (depending on supplies and demands). This stage is the most serious and the Town starts to prohibit outdoor irrigation for all water use customers and allows restricted irrigation of the Town’s most important Tier 1 parks (i.e. sports complex, Town Hall). The Town actively pursues leasing water from farmers and other entities. If interconnects with others exist, the Town will pursue getting water from those sources (i.e. Left Hand Water District). All other restrictions continue from the “Critical” level such as new landscape will be allowed by permit only.

To date our budget estimates for each step have been fairly accurate. We are however, a little behind schedule, which we have updated in the following table.

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Updated Schedule for Firestone DMP

Task	Date
CWCB approves grant and PO issued	9/19/2011
Kick-off meeting with Town staff (stakeholder selection)	10/5/2011
Kick-off meeting with Stakeholder Committee for Goal Development	10/12/2011
Submit 25% progress report to CWCB	10/19/2011
Submit 50% progress report to CWCB	2/1/2012
Submit 75% progress report to CWCB	2/24/2012
Submit draft plan to staff for review and comment	3/1/2012
Staff provides comment from review	3/12/2012
Submit draft report to Town Board for review	3/16/2012
Present draft report at Town Board meeting and collect comments	3/21/2012
Notify public of draft plan in paper and website	3/22/2012
Public review period (60 days)	3/22 - 5/21
Town provides public input comments to CWS	5/22/2012
CWS incorporates public comments	5/25/2012
Town Board formally adopts final report	6/13/2012
CWS submits final report to CWCB	6/14/2012
CWCB approves final report	<i>up to 90 days</i>

TOWN OF FIRESTONE - STAGED DROUGHT RESPONSE PROGRAM

Water Supply Index	>110%	101%-110%	90%-100%	<90%
Levels	Sustainable	Warning	Critical	Emergency
Water Savings Goal		10%	10-20%	30+%
SUPPLY-SIDE STRATEGIES:				
TECHNICAL & FINANCIAL ASSISTANCE:		Seek technical and financial assistance opportunities	Seek technical and financial assistance opportunities	Seek technical and financial assistance opportunities
CBT OPTIONS:	Max Carryover, lease excess	Max Carryover, consider leasing excess	Max Carryover, no leasing	Max Carryover, no leasing
PURCHASE RAW WATER ¹ :		Evaluate leasing water from farmers or purchasing raw water from other water providers	Evaluate leasing water from farmers or purchasing raw water from other water providers	Lease water from farmers or purchase raw water from other water providers
PURCHASE TREATED WATER:		Evaluate purchasing water through interconnects	Purchase treated water through interconnects	Purchase treated water through interconnects
OTHER SOURCES:			Exchange nonpotable water for treatable (i.e. CBT)	Consider trucking in water or bring in bottled water
CONTRACT NEGOTIATIONS:		Discuss with water provider a temporary reduction in raw water transfer requirements		
OPERATIONAL PRACTICES:			Consider reducing distribution service pressure	Reduce distribution service pressure as needed
DEMAND-SIDE STRATEGIES:				
DROUGHT SURCHARGE OR RATE INCREASE ² :			Consider drought surcharge or rate increase	Implement drought surcharge or rate increase as needed
OUTDOOR IRRIGATION FOR TOWN PROPERTY	Allow standard irrigation practices and promote efficient water use	Allow standard irrigation practices and promote efficient water use	Restrict irrigation on Tier 2 Town Parks	Eliminate irrigation on Tier 2 Town Parks and Restrict on Tier 1 Parks
TOWN FOUNTAINS			Ornamental fountains in Town Park are turned off	Ornamental fountains in Town Park are turned off
TOWN VEHICLE WASHING		Considering limit washing of Town fleet vehicles to once every other week	Limit washing of Town fleet vehicles to once every other week	Washing of Town fleet vehicles is prohibited
TOWN STREET CLEANING		Limit street and sidewalk cleaning	Street and sidewalk cleaning prohibited	Street and sidewalk cleaning prohibited
HYDRANT USE			Reduce frequency of hydrant flushing	Hydrant flushing is prohibited unless necessary for public safety
			Limit use of water for fire training	Encourage further reductions in water use for fire training
OUTDOOR IRRIGATION FOR HOA'S	Voluntary watering restrictions	Mandatory watering restrictions to three days a week	Mandatory watering restrictions to two days a week	HOA outdoor irrigation is prohibited, except for hand watering of trees and shrubs
OUTDOOR IRRIGATION FOR BUSINESS CUSTOMERS	Voluntary watering restrictions	Mandatory watering restrictions to three days a week	Mandatory watering restrictions to two days a week	Business outdoor irrigation is prohibited, except for hand watering of trees and shrubs
OUTDOOR IRRIGATION FOR RESIDENTIAL CUSTOMERS	Voluntary watering restrictions	Voluntary watering restrictions	Mandatory watering restrictions to two days a week	Residential outdoor irrigation is prohibited, except for hand watering of trees and shrubs
IRRIGATION OF NEW SOD/ LANDSCAPING			Irrigation of new sod, seeding, and landscaping by permit only	Irrigation of new sod, seeding, and landscaping by permit only
WASHING VEHICLES AND IMPERVIOUS SURFACES SUCH AS SIDEWALKS AND DRIVEWAYS	Power Washing and spraying of impervious surfaces should be minimized	Limit power washing and spraying of impervious surfaces	Power washing and spraying of impervious surfaces is prohibited.	Power washing and spraying of impervious surfaces is prohibited.
			Personal vehicles may only be washed at a commercial car wash	Personal vehicles may only be washed at a commercial car wash
INDOOR WATER USE			Encourage each resident to reduce their water consumption	Encourage each resident to reduce their water consumption
CONSTRUCTION WATER		Conserve and prevent wasting of construction water	Conserve and prevent wasting of construction water	Limit use of construction water
RESTAURANTS AND LODGING ESTABLISHMENTS	Restaurants are encouraged to promote conservation	Restaurants are encouraged to only serve water when requested by customer	All restaurants are required not to serve water unless customer specifically asked	All restaurants are required not to serve water unless customer specifically asked
	Lodging establishments are encouraged to promote conservation	Lodging establishments are encouraged to promote conservation and limit frequency of linen washings.	Lodging establishments are required to promote conservation (i.e. shorter showers) and only change linens and towels when specifically requested	Lodging establishments are required to promote conservation (i.e. shorter showers) and only change linens and towels when specifically requested

NOTES: ¹ Purchase raw water supplies that are treatable by Central Weld or future water suppliers

² Developing a drought reserve or rate stabilization fund can also be done to offset the costs associated with drought