clearWATERsolutions
water rights • planning • engineering

MEMORANDUM CWS File #19-140

To: Ben Wade, CWCB

From: Michelle Hatcher MH , Sira Sartori SS

cc: Leif Lesoing, Town of Windsor

Date: September 15, 2021

Subject: 50% Progress Report for the Town of Windsor's Drought Management Plan

---

Clear Water Solutions (CWS) is assisting the Town of Windsor 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 tasks in the drought management planning process and the Town has completed Tasks 1 through 4. As discussed in the Scope of Work, this 50% Progress Report includes the following elements:

- The success of meeting identified goals and objectives
- Obstacles encountered
- Preliminary findings or accomplishments[1]
    - Potential impacts that could occur during future droughts
    - Existing conservation measures provide drought mitigation (if applicable)
    - List of the selected supply- and demand-side mitigation and response strategies
    - General components of the public drought campaign
- Potential need for revisions to the scope of work and timelines

The water supply reliability can be assessed by looking at the firm yield of the Town's water supply. In this case, the firm yield is defined as the lowest historical volume of water per water right unit or share, multiplied by the number of units/shares owned by the Town. Currently, the Town's firm yield exceeds customer demands; however, a multi-year drought can still have an impact on the Town. Multi-year droughts draw down the storage supplies, lessoning the firm yield over time. In addition, the projected population increases for Windsor and more generally along the Front Range makes the acquisition of additional water supplies more costly and scarce, especially during drought periods when the competition to lease water increases.

[1] Findings in this progress report are preliminary and are subject to change in the final report.

The Drought Planning Committee participated in discussion about the historical drought impacts related to the Town's water supply. The biggest anticipated impact is damage to landscaping and turf for both the Town and its water users. **Table 1** summarizes the anticipated major impacts of a future drought in Windsor.

Table 1. Potential Future Drought Impacts

Future Impact	Severity
Damage to Landscaping and Lawns	Significant
Damage to Town of Windsor Landscaping and Turf	Significant
Damage to Sports Fields Creating Safety Issues	Significant
Loss of Revenue from Reduction in Water Sales	Moderate
Loss of Revenue from Parks and Recreation Activities	Significant
Costs to acquire/develop new water supplies/water rights transfers	Minor

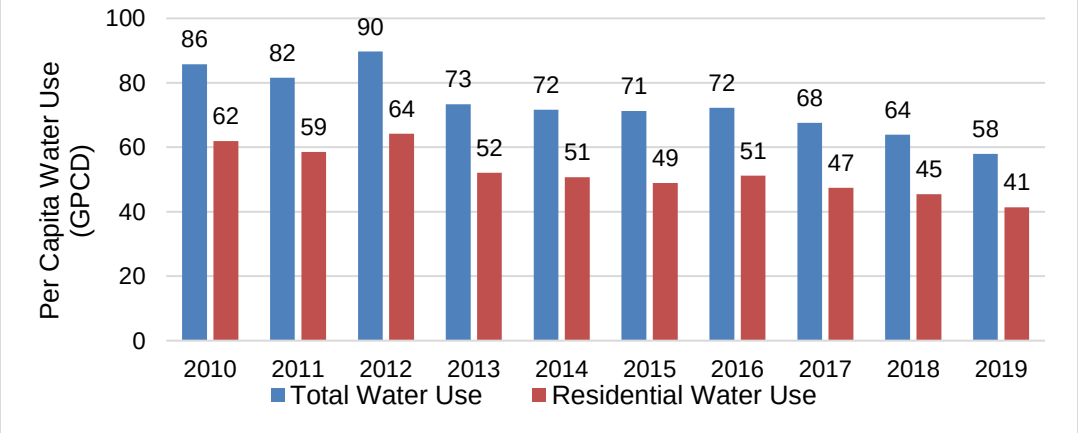
Minor – very little potential impact, will not require much staff time or resources to address
Moderate – some potential impact, will require more staff time to address
Significant – key potential impact concern, will be primary focus for staff

To reduce customer demand and use water more efficiently, the Town has implemented various water efficiency activities including foundational, targeted technical assistance, ordinances and regulations, and educational activities. These activities have largely been developed since the severe drought in the early 2000s. The Town updated its Municipal Water Efficiency Plan Update in 2015 to continue its conservation efforts. Some of the activities the Town has implemented historically include:

- Inclining/Tiered Rates, Volumetric Billing and Meter Upgrades
- Parks and Open Space Rain and ET Sensors
- Time of Day Watering Restrictions
- K-12 Teacher and Classroom Education Programs

The per-capita water usage in Windsor has decreased significantly over the past ten years even though the population has increased. Some variation in the per-capita water usage is due to climate streamflow conditions; however, it's some reduction in customer usage is attributed to the Town's water efficiency efforts. Water savings is likely from both passive and active efforts. The Town's per-capita water usage is shown in **Figure 1.**

Figure 1. Per-Capita Water Use (2010 - 2019)



The Town, with the help of the Drought Planning Committee, screened various supply- and demand-side mitigation and response strategies for implementation. Mitigation strategies are long-term and help the Town prepare for a drought; whereas, response strategies are implemented as a short-term response to a drought. Some strategies are considered both long- and short-term actions. The following table shows some of the supply- and demand-side mitigation and response strategies that were selected for implementation:

Table 2. Selection of Supply and Demand-Side Strategies

Drought Level	Level 1 - Voluntary	Level 2	Level 3	Level 4
SUPPLY-SIDE STRATEGIES:				
PURCHASE RAW WATER:		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
OTHER SOURCES:		Consider filing substitute water supply plan to temporarily use agricultural water rights if water is available		
CBT OPTIONS:	Max Carryover, lease excess	Max Carryover, consider leasing excess	Max Carryover, no leasing	Max Carryover, no leasing
DEMAND-SIDE STRATEGIES:				
OUTDOOR IRRIGATION FOR RESIDENTIAL CUSTOMERS:	Voluntary watering restrictions. Per ordinance no lawn watering permitted between 10 am and 6 pm	Mandatory watering restrictions to two days a week. Hand watering of trees and shrubs allowed. No watering between 10 am and 6 pm *(est. 10% savings*)*	Mandatory watering restrictions to one day a week. Hand watering of trees and shrubs allowed. No watering between 10 am and 6 pm *(est. 16% savings*)*	Residential outdoor irrigation is prohibited, except for hand watering of trees and shrubs *(est. 18% savings*)*
OUTDOOR POOLS, FOUNTAINS AND RECREATIONAL AMENITIES:			Ornamental fountains and recreational water amenities are turned off; Pools are not refilled	
INDOOR WATER USE:	Encourage each resident to reduce their water consumption			
WATER SURCHARGE OR RATE INCREASE:		Consider water surcharge increase	Implement an increased water surcharge or rate increase	Implement an increased water surcharge or rate increase

After selecting the strategies to implement, the Town and Drought Planning Committee discussed the public education drought campaign. Drought education campaigns are used to raise awareness of drought conditions and encourage customers to conserve water. Campaigns inform customers of the severity and what a water shortage means to the

community, which can often shift customer perceptions and behaviors during a drought. **Table 3** is list of public drought messages to streamline communication with the community.

Table 3. Public Drought Messages

Ongoing Conservation Messages	• Increase advertisement for water conservation incentives, such as rebates for water-efficient fixtures (i.e., toilets, clothes washers and irrigation controllers) • Promote Slow the Flow irrigation audits and indoor residential audits • Water conservation savings tips • Instructions for customers to reduce indoor and outdoor water use • Ways to clean impervious areas without a hose • Ways to wash cars that minimize water waste • Instructions for customers on how to set up a water use plan for their homes or businesses • Promote existing xeriscape gardens and Garden in a Box program
Drought Preparedness Messages	• Status of current drought conditions and drought stages* • Long-term sustainability of water system • Location where Drought Management Plan may be accessed • Measures and/or impacts that customers can expect if drought continues or intensifies • Factors that could influence water supply services and cost of services • Water provider's actions to save water and/or acquire new water • Policy recommendations, requirements and penalties • Enforcement of drought policies • Explanation of drought surcharge or rate increase*
Messages During Drought	• Current drought stage and watering restrictions (i.e., impacts the customer can expect if drought continues or intensifies)* • Publicize a drought hotline to report restriction violations • Landscape tips during drought • Post-drought landscape revival information • Provide customers with a drought report card showing monthly and annual water use pre-drought and during the drought • Publicize efforts of individuals and/or businesses as examples of how to reduce water use • Restrictions on use of athletic field to minimize turf impacts • Publicize efforts of individual and businesses as examples of how to reduce water use

During this DMP planning process, Windsor has been mostly successful in meeting its goals and schedule for the project to-date. No major obstacles have been encountered during the development of the DMP. **Table 4** provides an updated schedule.

Table 4. Revised DMP Update timeline.

Task	Date
Grant application submitted to CWCB	7/20/2020
CWCB approves grant and PO issued	10/20/2020
Kick-off meeting with Town staff (stakeholder selection)	11/3/2020
Drought Planning Committee Meeting #1	1/12/2021
Submit 25% progress report to CWCB	4/26/2021
Submit 50% progress report to CWCB	9/15/2021
Drought Planning Committee Meeting #2	5/13/2021
Submit 75% progress report to CWCB	9/15/2021
Submit draft plan to staff and Water & Sewer Board for review and comment	9/26/2021
Staff provides comment from review	10/13/2021
Drought Planning Committee Meeting #3 (post draft review)	10/13/2021
Submit draft report to Town Board for review	10/20/2021
Present draft report at Town Board meeting and collect comments	11/8/2021
Notify public of draft plan in paper and website	11/9/2021
Public review period (60 days)	1/10/2022
Town provides public input comments to CWS	1/20/2022
CWS incorporates public comments	1/31/2022
Town Board formally adopts final report	2/28/2022
CWS submits final report to CWCB	3/3/2022

Note: proposed dates are in blue.