



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee      **Date:** January 3, 2017  
**From:** John Irving, P.Eng. MPA      **File:** 10-6060-01/2016-Vol  
 Director, Engineering      01  
**Re:** **Water Shortage Response Plan – Proposed Changes**

### Staff Recommendation

That the comments on Metro Vancouver’s proposed changes to the Water Shortage Response Plan, as summarized in the staff report titled “Water Shortage Response Plan – Proposed Changes,” dated January 3, 2017, from the Director, Engineering be submitted to Metro Vancouver.

John Irving, P.Eng. MPA  
 Director, Engineering  
 (604-276-4140)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Water Services	<input checked="" type="checkbox"/>	
Parks	<input checked="" type="checkbox"/>	
Bylaws	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: DW	APPROVED BY CAO 

## Staff Report

### Origin

The Metro Vancouver Water Shortage Response Plan was prepared by Metro Vancouver and adopted by the City of Richmond as the Water Use Restriction Bylaw No. 7784. The bylaw restricts water use during the summer months and any time during the year in the event of a water shortage, and is intended to manage discretionary uses of water while minimizing impacts on residents and avoiding unnecessary hardships on businesses.

The plan was originally adopted in 2004, with updates adopted in 2011 and 2016. The 2016 update was initiated as a result of the hot and dry summer of 2015 and the resulting activation of incremental stages of the Water Shortage Response Plan. A review process was initiated by Metro Vancouver to address public feedback and challenges experienced. Immediate amendments were implemented the summer of 2016, and a broader review of the plan is being completed in 2016 and 2017.

On December 14, 2016, Metro Vancouver hosted a Local Government Workshop, where proposed updates to the Water Shortage Response Plan were presented to member municipalities. Metro Vancouver has requested municipal feedback on the proposed updates indicating support, support with conditions, or do not support for each of the proposed updates.

### Analysis

#### Proposed Updates to the Water Shortage Response Plan

##### *Stage 1 Activation Period*

The annual activation period for Stage 1 is proposed to be extended from the existing period of May 15 to October 15 to the proposed period of May 1 to October 15. This change is intended to improve consistency with other BC jurisdictions and to address increased water consumption earlier in the season that has been observed in recent years.

Staff recommends support of this proposed update. The need for lawn watering in May is generally low as Richmond's average May precipitation is 71.9 mm. In most years, Richmond residents will not need to water their lawns during this time and the earlier activation of Stage 1 will cause little inconvenience. In years of drought, such as 2015, this earlier activation will conserve water in the early season for use later in the summer. Given the low degree of inconvenience and the potential to delay or avoid the activation of advanced stages of the Water Shortage Response Plan in drought years, staff recommends support of this update.

##### *Sprinkling of Lawns*

Lawn sprinkling during Stage 1 is proposed to be reduced from three (3) mornings per week to two (2) mornings per week. The proposed plan permits lawn sprinkling for residential properties at the following times:

- Even-number addresses: Wednesdays and Saturdays, 4 am – 9 am
- Odd-number addresses: Thursdays and Sundays, 4 am – 9 am

This change is based on the rationale that lawns only require watering once a week, and is estimated to reduce seasonal water use by 2%.

Staff recommends support of this update as it will reduce the potential for over-watering of lawns and will assist in water conservation with little or no negative impact to the public. The Canadian Mortgage and Housing Corporation recommend lawn watering once per week before 9 am to maintain a healthy lawn. The update provides two opportunities per week for residents to apply this recommended level of irrigation.

#### *Sprinkling of Flowers, Planters, Shrubs and Trees*

The sprinkling of flowers, planters, shrubs and trees during Stages 1 and 2 is proposed to be restricted to morning lawn watering hours (4 am – 9 am) on any day.

Staff recommends support of this update. The proposed change in sprinkling hours will reduce the amount of irrigation water lost to evaporation and will continue to provide adequate irrigation for flowers, planters, shrubs and trees. Watering by hand will continue to be unrestricted should residents need to water outside the restricted hours.

#### *Watering of Sports Fields*

Watering of school yards, sports and sand-based playing fields, which is currently unrestricted in the 2016 Plan, is proposed to be restricted as follows:

- Stage 1: Restricted to 7:00 pm – 9:00 am, any day
- Stage 2: Restricted to 7:00 pm – 9:00 am, 4 days per week, unless operating under an approved local government water management plan
- Stage 3: Restricted to 7:00 pm – 9:00 am, 3 days per week, unless operating under an approved local government water management plan

The proposed change is intended to promote public sector leadership in water conservation efforts, and to prevent mid-day sprinkling to limit water lost to evaporation.

Staff recommends supporting this update with the condition that the irrigation of sports fields outside of the designated hours be permitted where damage to these fields would otherwise result. Based on Richmond's experience, watering of new or renovated sand-based fields during morning hours only may not be sufficient during hot summer months and may result in damage. If this additional condition is satisfied, staff recommends recommending the proposed change as it shows municipal leadership by following similar sprinkling hours to residential restrictions while allowing enough irrigation to support high traffic sand based playing fields.

### *Watering of Golf Courses*

Fairway watering for golf courses are restricted in Stages 2 and 3 under the existing Plan. The proposed Plan allows the watering of golf courses under an approved local government water management plan. This increases staff administration efforts, but allows more flexibility to golf courses while maintaining water use reduction targets.

Staff recommends supporting this update as it offers golf courses the flexibility of preparing irrigation plans that facilitate reduced water use while minimizing impacts on their commercial viability.

### *Commercial Car Washing*

Commercial car washing is currently unrestricted for all Stages. The revised plan proposes to restrict use under Stage 3 to automatic systems that recirculate at least 50% of water, or high-pressure wand facilities. This is to provide consistency with other aesthetic water use restrictions within Stage 3.

Staff recommends supporting this update as the proposed change encourages the adoption of efficient technologies that will reduce annual water use in car wash facilities.

### *Filling of Commercial Pool and Hot Tubs*

The topping up or filling of hotel, residential strata, and private club pools and hot tubs, is currently prohibited under Stage 3. The revised plan proposes that the topping up and filling of these pools be permitted.

Staff recommends supporting this update as the proposed change will minimize impacts to public pool users and businesses with only marginal increases to Stage 3 water use.

### Additional Comments

#### *Water Metering*

Water metering is a proven water demand management tool. It reduces water use by offering cost incentives to discouraging wastage of water, as well as helping property owners identify and reduce leaks on private property. Richmond recommends that Metro Vancouver implement universal water metering as a regional water demand management tool. If all municipalities followed the example set by metered communities, there would be significant volumes of water conserved without creating hardships for communities and businesses in the region. This has the potential of deferring or eliminating the need to activate advanced stages of the Water Shortage Response Plan, thereby minimizing impacts to residents and businesses.

Richmond has installed water meters for 100% of ICI properties, 93% of single-family properties, and 40% of multi-family properties. This allows the City to review quarterly water consumptions in order to identify properties with possible leaks and inform homeowners in a timely manner. Such leaks would have been unnoticed and continue to leak indefinitely if water meters had not been installed.

*Activation of Advanced Stages*

Richmond recommends that measurable triggers, such as reservoir levels, for activating and deactivating stages 2, 3 and 4 of the Water Shortage Response Plan be implemented. This will improve Metro Vancouver’s ability to activate and deactivate stages in a consistent, transparent and pragmatic manner. The activation and deactivation of these stages is currently at the discretion of the GVWD Commissioner guided by factors outlined within the Water Shortage Response Plan.

**Financial Impact**

There is no financial impact anticipated.

**Conclusion**

The Metro Vancouver Water Shortage Response Plan has been an effective tool for managing water demand during times of shortages or emergencies. The proposed amendments further improve demand management and promote water conservation.

Staff recommends that comments regarding the proposed updates to the Water Shortage Response Plan as summarized in Table 1 be endorsed and submitted to Metro Vancouver.

Table 1 - Water Shortage Response Plan Comments

<b>Activity</b>	<b>Proposed Update</b>	<b>City of Richmond Comment</b>
Stage 1 Activation	Amend activation of Stage 1 from May 15 to May 1.	Support.
Lawn Watering	Reduce from three (3) mornings per week to two (2) mornings per week during Stages 1 and 2.	Support.
Sprinkling of Flowers, Planters, Shrubs and Trees	Restrict to morning hours only during Stages 1 and 2.	Support.
Watering of Sports Fields	Restrict to 7:00 pm – 9:00 am, any day during Stage 1 and four (4) and three (3) days respectively during Stages 2 and 3.	Support with condition – that the irrigation of sports fields outside of the designated hours be permitted where damage to these fields would otherwise result.
Watering of Golf Courses	Allow under an approved local government water management plan during Stages 2 and 3.	Support.
Commercial Car Wash	Restrict to use of automatic systems that recirculate water or high pressure wand facilities only during Stage 2.	Support.

Filling of Commercial Pools and Hot Tubs	Allow during Stage 3.	Support.
Water Metering	N/A	Richmond supports universal water metering across the region.
Activation of Advanced Stages	N/A	Richmond recommends that measurable triggers for activating and deactivating of advanced stages be implemented.

Municipal comments will be incorporated into the final Water Shortage Response Plan which is scheduled to be presented to the Greater Vancouver Water District Board for approval in the spring of 2017 and implemented in November 2017.

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