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June 13, 2025

City of Ottawa – Planning Real Estate and Economic Development Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Technical Memorandum
Western Development Lands
Caivan – Fox Run Phase 5 Allocation

Introduction

Caivan retained DSEL to prepare a servicing allocation rationale in support of the lifting of the holding provision on 26 lot of their development in Fox Run Phase 5. See ***Figure 1*** illustrating which lots are being held. The holding provision was established to ensure that development did not exceed the available water supply. The following was prepared to confirm that capacity exists to support the lifting of the holding provision for Fox Run Phase 5.

Figure 1 - Frozen Lot (Green Hatch)

Water Supply System Background

The subject property is located within the Village of Richmond Western Development lands. There are two developers active within the community, Caivan and Mattamy.

Water is delivered to the community through the Richmond West PS. The Richmond West PS provides water to the Western Development lands only.

The Richmond West PS was originally commissioned in 2019. The original facility consists of 2 wells, a pump building, and a 1,175m^3 reservoir. The two wells providing water to the facility have rated capacities of 40 and 28 L/s. There are three high lift pumps that respond to a wide range of flow from 0.25L/s to 67L/s, and two fire pumps were selected to provide 145L/s each. The firm capacity of the Richmond West PS is 28L/s.

The reservoir was expanded to 2,603m^3 in 2024 and was commissioned in May 2025.

Lottowater completed pump tests on a dormant well available to the Richmond West PS between May 17 and May 25, 2023. Dillon prepared and submitted supporting documentation on July 26, 2023 to support a permit to take water (PTTW) to activate the well for inclusion in the Richmond West PS. The dormant well was confirmed to provide 15L/s.

Stantec submitted 50% design drawings for the inclusion of a third well to the City on September 9, 2023. The submitted design would increase the firm capacity of the facility from 28L/s to 43L/s.

Stantec submitted a phased approach to the well expansion project on September 20, 2024 to allow infrastructure improvements to keep up with development pace. The phased approach includes upgrading an existing jockey pump to meet peak hour demands. In coordination with City staff a 13L/s single stage jockey pump was selected. Client representatives met with the City March 21, 2025 to review what population can be supported by the increased jockey pump capacity. City confirmed that 6,324p can be supported. See attached meeting notes. The Jockey pump work is anticipated to be commissioned in Fall 2025.

The City of Ottawa have secured funding for the Well #3 project, where the developers have executed a funding agreement for the project. The project is 100% developer funded.

Well 3 is anticipated to be completed no later than November 2027.

Firm Capacity Analysis

The City of Ottawa provided updated consumption rates, average day demands, and outdoor water uses through the review and analysis of the expansion areas. See correspondence attached. ***Table 1*** summarizes the updated rates.

Table 1 - Water Supply Design Parameters

Unit Type	Consumption Rate	Population Density	Average Day Demand	Outdoor Water Demand	Max Day
	(L/c/d)	(p/unit)	(L/unit/d)	(L/unit/d)	(-)
SFH (Single Family Home)	180	3.4	612	700	AVG DAY + OWD
MLT (Multi-Residential Unit)	198	2.7	534.6	350	AVG DAY + OWD
MLT without Rear Yard	198	2.7	534.6	0	AVG DAY
INS (Institutional)	28,000	L/ha/d			Non-coincidental

Table 2 illustrates approved development phases along with the inclusion of Fox Run Phase 5. The development phases are listed in order of allocation.

Table 2 - Estimated Water Demand

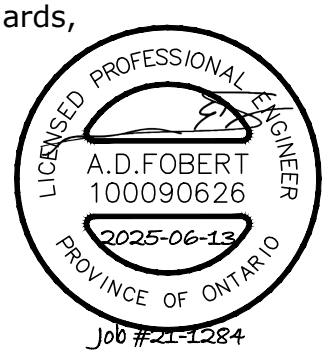
Phase	SFH	MLT	MLT w/o rear yard	INS Area	MXDY
				(ha)	(L/s)
Caivan Fox Run Phase 1	219				3.33
Caivan Fox Run Phase 2	200				3.04
Caivan Fox Run Phase 3	31	80	83		1.80
Mattamy Phase 1	130	47			2.46
Mattamy Phase 2	119	37	84	2.84	3.63
Caivan Fox Run Phase 4	56	62	16		1.58
Mattamy Phase 4	87	28			1.61
Mattamy Phase 3	191	42			3.33
Mattamy Phase 5	119				1.81
Richmond North Phase 1		108	15		1.20
Caivan Fox Run Phase 5	99	4			1.54
				Total	**25.32**

The estimated water demand for all phases, up to and including Fox Run Phase 5 is 25.32L/s based on the updated rates provided by the City. The existing firm capacity of the Richmond is 28L/s. Therefore, sufficient capacity exists to support the full build out of Fox Run Phase 5.

Conclusion

There is sufficient maximum day capacity within the existing facility to support the lifting of the holding provisions on Fox Run Phase 5.

Regards,



Adam D. Fobert P.Eng, DSEL

Adam Fobert

From: Bernius, Andrew <Andrew.Bernius@stantec.com>
Sent: March 21, 2025 3:43 PM
To: Marc Pichette; DeLoyde, Jeff; Adam Fobert; Bougadis, John; Elsby, Cam
Cc: Chochlinski, Gregory; Shaw, Maria; Jan, Omar
Subject: RE: 1183 - Richmond Jockey Pump Capacity Next Steps, Meeting Notes

Hello all, please see below notes and next steps from our meeting.

Per email correspondence in January 2025, City had noted that a population of 6000 people is the maximum that can be supported with the addition of the proposed jockey pump of 13L/s capacity based on water master plan calculations, and that actual water demands cannot be used, and that developer requests for a population of 6324 could not be supported.

Richmond Water PS Jockey Pump Discussion Meeting Notes
March 19, 2:00PM, Microsoft Teams
Attendees:
City of Ottawa: Cam Elsby, Jeff DeLoyde, John Bougadis
Stantec: Andrew Bernius
DSEL: Marc Pichette, Adam Fobert

A draft CCN was previously provided in December 2024, and the current reservoir contractor Sulpher construction has ordered VFD due to long lead timelines for this component.
DSEL noted the likely installation of the jockey pump in fall 2025, and that Well 3 design upgrades for the ultimate capacity is underway currently with a May-June draft package ready by Stantec pending design confirmation details by the City.
City agreed to allow population of 6,324 to proceed under interim jockey pump solution with the understanding that the Well #3 project is advancing.
City noted this is to allow Richmond North Phase 2 to proceed and no further population increases would be considered in advance of Well#3 construction.
City understood the approach and phasing with an acceptance of a lower margin for water use, and accepted the implementation of the 13 L/s single stage jockey pump.
City to expedite review periods wherever possible to accelerate Well#3 design.
Stantec to confirm any steps required to release the jockey pump scope for CCN. **Stantec to continue to followup with the City on final Well 3 upgrade design details.**

Following the meeting, Stantec confirmed that our CCN tender package for the jockey pump does not need to be modified at all from the previous issued draft, only stamped and released, so this package will be reissued next week to the City and Jacobs for updated quote. Requoting by the contractor should not take long as they have already quoted the work before.

Andrew Bernius P.Eng, PMP
Process/Treatment Division Lead

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Stantec
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Ottawa ON K2C 3G4

-----Original Appointment-----
From: Marc Pichette <MPichette@dsel.ca>
Sent: Tuesday, March 18, 2025 7:40 PM
To: Marc Pichette; DeLoyde, Jeff; Bernius, Andrew; Adam Fobert; Bougadis, John; Elsby, Cam
Subject: 1183 - Richmond Jockey Pump Capacity
When: Wednesday, March 19, 2025 2:00 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Microsoft Teams Need help?

Join the meeting now

Meeting ID: 225 669 589 360

Passcode: Fn7MT3Dq

For organizers: Meeting options

Adam Fobert

From: Alex Tourigny
Sent: November 28, 2024 10:34 AM
To: Adam Fobert; Marc Pichette; Matt Wingate; Braden Kaminski; Steve Merrick; Peter Mott; Alexandra Marchese; Hannah Bulmer; Jeremy Chouinard
Subject: City Water Demand Parameters for Populations exceeding 3000
Attachments: DraftFinal_SystemLevelDemandParameters_24May2024(JB).xlsx

FYI – From the City.

Hi Alex,

I have just been made aware that given the population exceeds 3,000, please use the attached system-level parameters to calculate the demands for the application. Please note that these parameters were recently developed internally exclusively for populations exceeding 3,000.

Let me know if you have any questions.

Best Regards,

Mohammed Fawzi, P.Eng.
Senior Project Manager (A), Infrastructure Approvals
Development Review – West Branch
Planning, Development and Building Services Department (PDBS)| Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)
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System Level Parameters for MSS (2024)	Consumption Rate[1]	Population Density cap/unit[3]	Average Day Demand (L/unit/day)	Residential Outdoor Water Demand (OWD) (L/unit/day)[4]	Maximum Day Demand (L/unit/day)	Peak Hour Demand
SFH	180	3.4	612	700	Average Day Demand + OWD	2.1 x Maximum Day Demand
MLT	198	2.7	535	350	Average Day Demand + OWD	2.1 x Maximum Day Demand
MLT without rear yards	198	2.7	535	0	Average Day Demand	1.6 x Maximum Day Demand
APT	219	1.8	394	0	Average Day Demand	1.6 x Maximum Day Demand
EMP[2]	138	1	138	N/A	1.5 x Average Day Demand[5]	1.8 x Maximum Day Demand
Water Loss per connection	N/A	N/A	80	N/A	Average Day Demand	Average Day Demand
Total Demand			**Sum above for Total Average Day**		**Sum above for Total Max Day**	**Sum above for Total Peak Hour**

[1] Values represent L/cap/day for residential land uses and L/emp/day for employment areas.

[2] Apply a rate of 17,000 l/h/day if employment totals are unknown. The rate represents the average demand for ICI areas at the 90th percentile.

[3] Occupancy factors should be chosen according to housing type. The values shown were extracted from Section 4.2.8 of the Ottawa Design Guidelines - Water Distribution (2010)

[4] Outdoor water demand is applied to single family, semi-detached and townhome units with rear yards.

[5] The 1.5 multiplier represents the additional outdoor water demand associated with employment areas.