

File 116167

February 27, 2026

Pete Graham
Ted North (295 Mountain Road) Ltd.
7 Edinburgh Road South, Unit 1
Guelph, Ontario N1H 5N8
pgraham@gwddevelopments.ca

Re: Panorama North, 295 Mountain Road, Collingwood
West SWM Pond

Dear Pete:

Tatham Engineering Limited was retained by Ted North (295 Mountain Road) Ltd. to review the feasibility of providing on-site stormwater management (SWM) for the west portion of the Panorama North Development.

BACKGROUND

Panorama North is a draft-plan-approved subdivision located in the west end of Collingwood, with frontage along Mountain Road and Tenth Line, north and west of the Mountain Road/Tenth Line intersection. The approved draft plan is enclosed with this letter for reference. To support the draft plan application, Tatham Engineering prepared a Regional Stormwater Management Report outlining the stormwater management (SWM) strategy for the Panorama North Development and surrounding lands.

The SWM strategy divides the site into two drainage areas, as described below and shown on the Post-Development Drainage Plan (Drawing DP-2) included in the Regional SWM Report:

1. The east portion of the development (approx. 8.4 ha) drains west to an on-site pond that outlets north to Tenth Line.
2. The west portion of the development (approx. 11.5 ha) was originally planned to drain south uncontrolled across Mountain Road to the adjacent Panorama subdivision and be conveyed to the Panorama SWM Pond for water quality and quantity control.

The plan for the east side remains unchanged. However, as the Panorama subdivision advanced to detailed design, a cost-sharing agreement could not be reached to upsize the Panorama SWM Pond to accommodate Panorama North flows. The Panorama subdivision has instead provided drainage provisions only for existing runoff from Panorama North, including flows from the Sly property and Mair Mills Estates.

Therefore, Panorama North must now provide its own water quality and quantity controls on site and discharge to the Panorama subdivision at existing peak flow rates.

OBJECTIVE

The objective of this letter is to assess the feasibility of providing SWM controls for the west portion of Panorama North within Block 126 of the approved draft plan, which totals approximately 2.14 ha and is adjacent to the existing outlet. The on-site SWM controls must:

- Provide enhanced-level water quality control;
- Attenuate post-development peak flows to existing condition rates for the frequency storms; and
- Provide safe conveyance of the regional storm.

EXISTING HYDROLOGY

Existing drainage patterns and hydrology are described in the Regional SWM Report. Visual OTTHYMO hydrologic modelling was used to quantify existing peak flows from Panorama North to the Panorama subdivision, including upstream tributary areas. These peak flows serve as the proposed condition peak flow targets. A summary is provided in Table 1 below

Table 1: Existing Condition Peak Flow Summary for Panorama North

Design Storm	EXISTING CONDITION PEAK FLOW TARGET (m ³ /s)	
	4-hr Chicago	24-hr SCS
25 mm	0.028	-
1:2-Year	0.054	0.092
1:5-Year	0.118	0.187
1:10-Year	0.184	0.257
1:25-Year	0.282	0.365
1:50-Year	0.366	0.432
1:100-Year	0.438	0.501
Regional (Timmins)	1.665	-



PROPOSED SWM PLAN

A preliminary wet pond SWM facility has been conceptually sized to manage flows from the west portion of Panorama North. The proposed facility footprint is approximately 0.8 ha and will be located within Block 126. A conceptual volume and discharge table is enclosed. The facility will outlet through the existing culvert under Mountain Road into the Panorama subdivision.

Quality Control

Water quality calculations were completed per the MECP Stormwater Management Planning and Design Manual (2003). For the 11.5 ha drainage area with 59% imperviousness, the required volumes are as follows:

- Permanent pool: 1,832 m³
- Extended detention (for enhanced quality control): 460 m³
- Extended detention for 25 mm retention: 1,781 m³

The conceptual pond provides:

- Permanent pool: 3,285 m³
- Extended detention: 2,073 m³

This exceeds the volume required for enhanced (80% TSS removal) water quality control.

Erosion Control

In accordance with NVCA policy, to provide downstream erosion control, the 25mm storm drawdown time should exceed 48 hours. A drawdown calculation is enclosed which shows that the 25mm storm drawdown time is approximately 49 hours and the extended detention drawdown time is approximately 53 hours.

Quantity Control

Proposed drainage was assessed using visual OTTHYMO hydrologic modelling. The results demonstrate that the conceptual pond provides sufficient volume to attenuate post-development peak flows to existing condition targets for 25 mm through 1:100-year storm events, as summarized in Table 2 below.



Table 2: Proposed Condition Peak Flow Summary for Panorama North

DESIGN STORMS	PEAK FLOW RATES m ³ /s	
	CHI	SCS
25 mm	0.018 (0.028)	-
2 Year	0.035 (0.054)	0.069 (0.092)
5 Year	0.082 (0.118)	0.143 (0.187)
10 Year	0.143 (0.184)	0.190 (0.257)
25 Year	0.223 (0.282)	0.277 (0.365)
50 Year	0.289 (0.366)	0.350 (0.432)
100 Year	0.363 (0.438)	0.426 (0.501)
Regional Timmins Storm	2.000 (1.665)	-

Note: CHI - Chicago 4 Hour Design Storms; SCS - SCS 24 Hour Type II Design Storms; (0.092) - Existing condition flow rate.

Regional Storm Conveyance

The regional storm flows will be safely conveyed to suitable outlets split between the existing receiving outlets which include the Cranberry Marsh, Panorama Subdivision, Tenth Line and Mountain Road. This will be confirmed at detailed design.



CONCLUSION

This assessment confirms that it is feasible to construct an SWM facility within Block 126 of the approved draft plan to service the west portion of the Panorama North subdivision. The conceptual design requires approximately 0.8 ha of the 2.14 ha block. Although the conceptual pond has been sized using assumed grades and areas, the final layout will need to be refined through coordination with the owner and planning consultant as part of an upcoming draft plan redline revision.

Yours truly,

Tatham Engineering Limited



Kyle Latter B.Eng., EIT
Engineering Intern
KRL/AO: rh
Encl.



Andrew Overholt, P.Eng.
Group Leader - Land Development

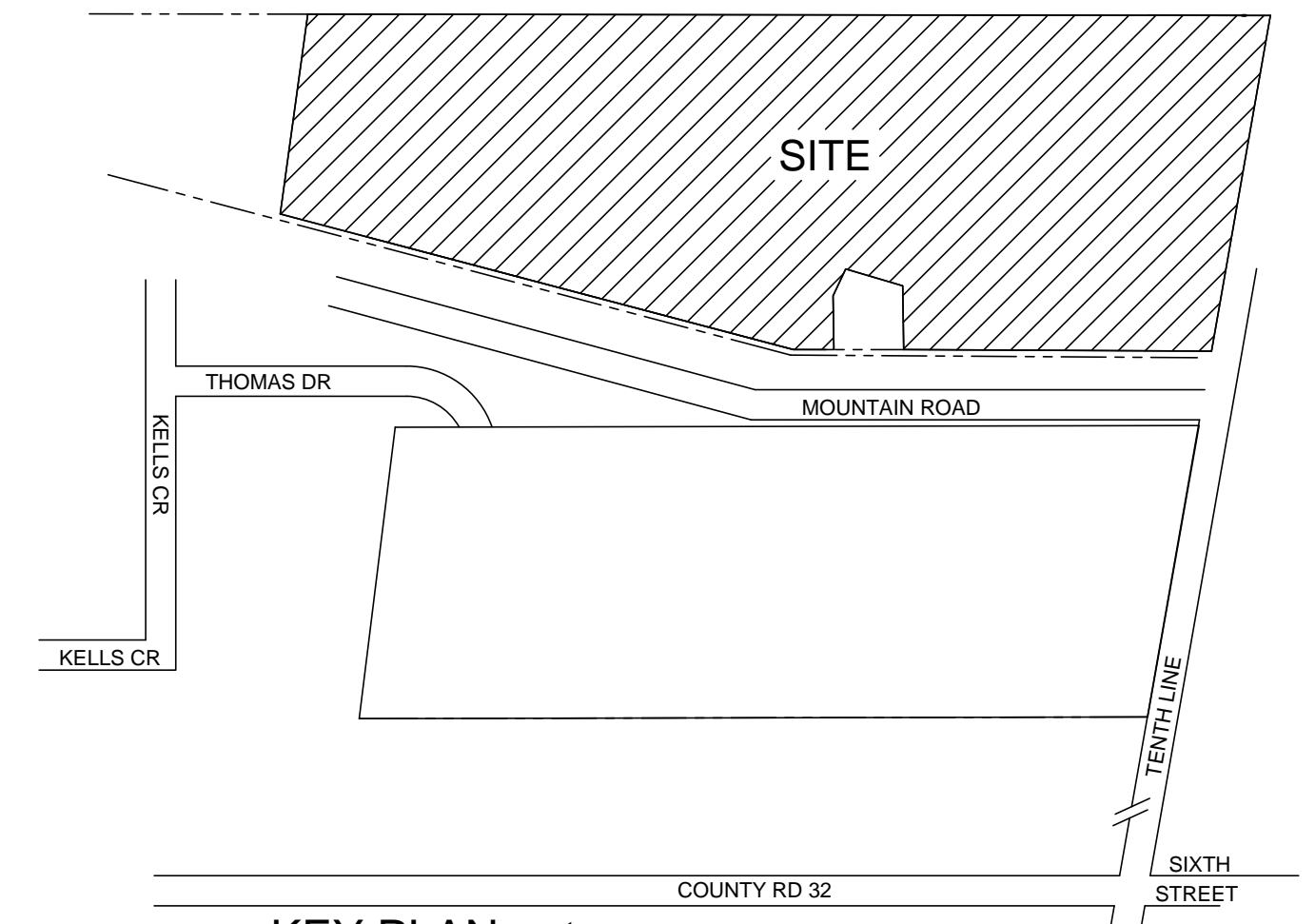
copy: Shelley Wells Plan Wells Associates shelley@planwells.com

O:\Collingwood\2016 Projects\116167 - Todco\Documents\Reports\Preliminary Pond Options\L-Panorama North West SWM Pond .docx



**DRAFT PLAN OF SUBDIVISION OF
PART OF OF LOT 45
CONCESSION 11
(FORMERLY TOWNSHIP OF NOTTAWASAGA)
TOWN OF COLLINGWOOD
COUNTY OF SIMCOE**

SCALE 1 : 1250



LAND USE SCHEDULE

DESCRIPTION	UNITS	LOTS/BLOCKS	AREA (ha.)
Single Detached Residential	124	LOTS 1-124	4.48
Multi Unit Residential	424	BLOCKS 125,126,127,128,129, 130	8.00
Multi Unit Residential or Elementary School	50	BLOCK 132	2.25
Future Single Detached Residential	2	BLOCK 134	0.09
Park		BLOCK 133	1.01
Stormwater Management		BLOCK 131	0.80
Hydro Sub-Station		BLOCK 137	0.80
Trail		BLOCK 138	0.12
Road Widening		BLOCKS 139, 140, 141 & 144	0.39
10x10 Daylight Triangle		BLOCKS 142 & 143	0.01
0.3 m Reserve		BLOCK 145, 146, 147, 148, 149 & 150	0.03
Public Roads		Streets A through D	2.78
Future Roads		BLOCKS 135 & 136	0.11
TOTAL	600		20.15 ha

ADDITIONAL INFORMATION
(UNDER SECTION 51(17) OF THE PLANNING ACT)
INFORMATION REQUIRED BY CLAUSES a,b,c,d,e,f,g,j and l ARE AS SHOWN ON DRAFT PLAN.
h) Municipal Water
i) Clay Loam
k) Municipal Sewer

OWNER'S CERTIFICATE
TODCO INVESTMENTS INC. AUTHORIZES THE SUBMISSION OF THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF COLLINGWOOD PLANNING DEPARTMENT.
Tom Drucker
TOM DRUCKER
TODCO INVESTMENTS INC.
FEBRUARY 3, 2023
DATE

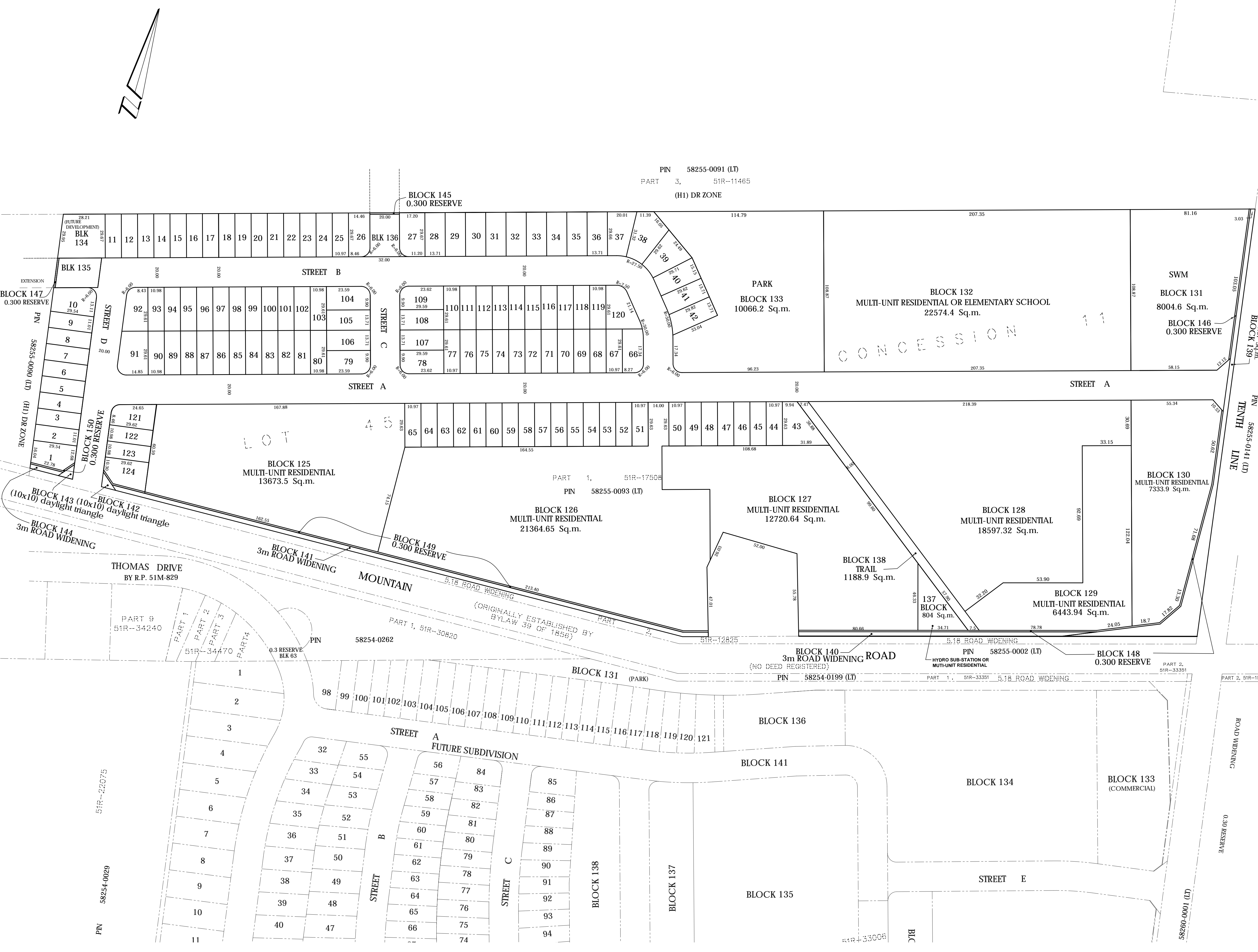
SURVEYOR'S CERTIFICATE
I CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE CORRECTLY SHOWN.
James M. Laws
JAMES M. LAWS, O.L.S.
Van Harten Surveying Inc.
FEBRUARY 3, 2023
DATE

NOTE:
DISTANCES SHOWN ON CURVES ARE CHORD DISTANCES.

METRIC:
DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

Van Harten
SURVEYING INC.
LAND SURVEYORS and ENGINEERS

Elmira Ph: 519-669-5070	Guelph Ph: 519-821-2763	Orangeville Ph: 519-940-4110
www.vanharten.com		info@vanharten.com
DRAWN BY: JL	CHECKED BY: JML	PROJECT NO: 25806-18
Apr 12, 2023 10:48:48 AM C:\000BASEPLANS\51M Mair Mills\PANORAMA NORTH\ACAD\ DRAFT PLAN P NORTH REV6.dwg		





Project:	Panorama North Subdivision
Date:	Feb. 23, 2026
File No.:	116167
Designed By:	KRL
Checked By:	AO
Subject:	Pond Volume Table

PANORAMA NORTH SUBDIVISION - WEST SWM POND

Bottom Elev. 194.90
 Perm. Pool Elev. 195.90
 Top of Bank 197.40
 Stage 0.1

Elev. (m)	Depth (m)	Main Cell						Total		
		Area (m ²)	Avg. Area (m ²)	Dead (m ³)	Accum. Dead (m ³)	Live (m ³)	Accum. Live (m ³)	Accum. Dead (m ³)	Accum. Live (m ³)	Accum. Total (m ³)
194.90	0.00	1739	0	0	0			0	0	0
195.00	0.10	2045	1892	189	189			189	0	189
195.10	0.20	2351	2198	220	409			409	0	409
195.20	0.30	2657	2504	250	659			659	0	659
195.30	0.40	2963	2810	281	940			940	0	940
195.40	0.50	3270	3116	312	1252			1252	0	1252
195.50	0.60	3576	3423	342	1594			1594	0	1594
195.60	0.70	3882	3729	373	1967			1967	0	1967
195.70	0.80	4188	4035	403	2371			2371	0	2371
195.80	0.90	4494	4341	434	2805			2805	0	2805
195.90	1.00	4800	4800	480	3285	0	0	3285	0	3285
196.00	1.10	4991	4896		3285	490	490	3285	490	3774
196.10	1.20	5183	5087		3285	509	998	3285	998	4283
196.20	1.30	5374	5278		3285	528	1526	3285	1526	4811
196.30	1.40	5565	5470		3285	547	2073	3285	2073	5358
196.40	1.50	5757	5661		3285	566	2639	3285	2639	5924
196.50	1.60	5948	5661		3285	566	3205	3285	3205	6490
196.60	1.70	6139	6044		3285	604	3810	3285	3810	7094
196.70	1.80	6331	6235		3285	624	4433	3285	4433	7718
196.80	1.90	6522	6427		3285	643	5076	3285	5076	8361
196.90	2.00	6714	6618		3285	662	5738	3285	5738	9022
197.00	2.10	6905	6809		3285	681	6419	3285	6419	9703
197.10	2.20	7096	7001		3285	700	7119	3285	7119	10403
197.20	2.30	7288	7192		3285	719	7838	3285	7838	11123
197.30	2.40	7479	7383		3285	738	8576	3285	8576	11861
197.40	2.50	7670	7096		3285	710	9286	3285	9286	12571
197.50	2.60	7862	7766		3285	777	10062	3285	10062	13347
197.60	2.70	8053	7957		3285	796	10858	3285	10858	14143



Project:	Panorama North Subdivision
Date:	Feb. 23, 2026
File No.:	116167
Designed By:	KRL
Checked By:	AO
Subject:	Pond Discharge Table

PANORAMA NORTH SUBDIVISION - WEST SWM POND

ORIFICE CONTROL

	Low Flow Orifice	DICB Outlet Pipe	Outlet Pipe
Orifice/Pipe Size (mm)	125	450	450
Cross-sectional Area (sq.m)	0.012272	0.159043	0.159043
Orifice Coefficient	0.63	0.80	0.80
Invert Elevation (m)	195.90	196.00	195.90

WEIR CONTROL

	Weir 1	Weir 2	Overflow
Weir Width (m)	0.20	0.90	4.0
Sill elevation (m)	196.30	196.60	197.10
Weir Coefficient	1.84	1.84	1.70
Weir Side Slopes (H:V)			20.0
Downstream Weir Length (m)			3.0

CONTROL STRUCTURE CONFIGURATION

Water Level (m)	Outlet Structure											Total Flow (cms)		
	Low Flow Orifice		DICB Flow				Outlet Pipe		Overflow Weir					
	Head (m)	Discharge (cms)	Weir 1		Weir 2		Outlet Pipe		Head (m)	Discharge (cms)				
		Head (m)	Capacity (cms)	Head (m)	Capacity (cms)	Head (m)	Capacity (cms)	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)			
195.90	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
196.00	0.100	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.014	0.000	0.000	0.005
196.10	0.137	0.013	0.000	0.000	0.000	0.000	0.000	0.100	0.014	0.200	0.050	0.000	0.000	0.013
196.20	0.237	0.017	0.000	0.000	0.000	0.000	0.000	0.200	0.050	0.300	0.309	0.000	0.000	0.017
196.30	0.337	0.020	0.000	0.000	0.000	0.000	0.000	0.300	0.309	0.400	0.356	0.000	0.000	0.020
196.40	0.437	0.023	0.100	0.012	0.000	0.000	0.400	0.356	0.398	0.500	0.398	0.000	0.000	0.035
196.50	0.537	0.025	0.200	0.033	0.000	0.000	0.500	0.398	0.345	0.375	0.345	0.000	0.000	0.058
196.60	0.637	0.027	0.300	0.060	0.000	0.000	0.375	0.345	0.388	0.475	0.388	0.000	0.000	0.087
196.70	0.737	0.029	0.400	0.093	0.100	0.041	0.475	0.388	0.427	0.575	0.427	0.000	0.000	0.163
196.80	0.837	0.031	0.500	0.130	0.200	0.115	0.575	0.427	0.463	0.675	0.463	0.000	0.000	0.276
196.90	0.937	0.033	0.600	0.171	0.300	0.212	0.675	0.463	0.496	0.775	0.496	0.000	0.000	0.416
197.00	1.037	0.035	0.700	0.216	0.400	0.326	0.775	0.496	0.527	0.875	0.527	0.000	0.000	0.527
197.10	1.137	0.037	0.800	0.263	0.500	0.455	0.875	0.527	0.556	0.975	0.556	0.000	0.000	0.556
197.20	1.237	0.038	0.900	0.314	0.600	0.599	0.975	0.556	0.584	1.075	0.584	0.100	0.323	0.907
197.30	1.337	0.040	1.000	0.368	0.700	0.754	1.075	0.584	0.611	1.175	0.611	0.200	1.216	1.827
197.40	1.437	0.041	1.100	0.425	0.800	0.922	1.175	0.611	0.636	1.275	0.636	0.300	2.793	3.429
197.50	1.537	0.042	1.200	0.484	0.900	1.100	1.275	0.636	0.661	1.375	0.661	0.400	5.161	5.822
197.60	1.637	0.044	1.300	0.545	1.000	1.288	1.375	0.661	0.684	1.475	0.684	0.500	8.415	9.099

Additional Notes:

NVCA Weir Flow Calculation Applied For Weir Flow Below Circular Orifice Centroid

$$Q_w = 1.65 \left(\frac{\pi \cdot (D^2)}{4} \right) \left(2 \cdot \cos^{-1} \left[\frac{((D/2)-d)}{(D/2)} \right] \cdot \frac{(180/\pi)}{360} - \left(\frac{D}{2} - d \right) \frac{(D-d)}{d} \right) d^{1.5}$$

Where:
 Q_w is weir flow (m³/s)
 D is orifice diameter (m)
 d is depth of flow above the invert (m)

Project Details

Panorama North	116167
----------------	--------

Prepared By

KRL	Feb 23, 2026
-----	--------------

Water Quality Sizing Criteria

Methodology & Data Source	Volumetric water quality criteria as presented in Table 3.2 in Ministry of Environment, Conservation and Parks (MECP) Stormwater Management Planning & Design Manual (SWMPDM) March 2003.
---------------------------	---

Contributing Catchments

Catchment ID	Area (ha)	Impervious (%)
201	11.50	59%
Total	11.50	59.0%

Treatment Method Details

SWM Facility Type	Wet Pond
Target Treatment Level	Enhanced Level
Treatment Percentage	80%

Treatment Requirements

Water Quality Storage Requirement	2,292 m ³
Extended Detention Volume (40 m³)	460 m ³
Permanent Pool Volume Required	1,832 m ³
25 mm Storm Runoff Depth	15.49 mm
25 mm Storm Runoff Volume	1,781 m ³
Required Extended Detention Volume	1,781 m ³
Erosion Control Storage Required	2,289 m ³

Permanent Pool Volume Provided (m³) 3,285 **Provided** > **Required**

Extended Detention Storage Provided (m³) 2,073 **Provided** > **Required**

Active Storage Provided (m³) 10,858 **Provided** > **Required**

Project Details

Panorama North	116167
----------------	--------

Prepared By

KRL	Feb. 23, 2026
-----	---------------

Pond Drawdown Time Calculation

Methodology & Data Source	Falling head orifice equation which assumes a constant pond surface area, per Equation 4.10 of Ministry of Environment, Conservation and Parks (MECP) Stormwater Management Planning & Design Manual (SWMPDM) March 2003.
---------------------------	---

$$\text{Drawdown Time (t)} = \frac{2 \times A_p}{C \times A_o \times 2g^{0.5}} (h_1^{0.5} - h_2^{0.5})$$

Pond Operation Characteristics

Orifice Diameter	=	125.0	mm
Cross Sectional Area of Orifice (A_o)	=	0.0123	m ²
Orifice Discharge Coefficient (C)	=	0.63	
Permanent Pool Water Level	=	195.90	m
Permanent Pool Surface Area	=	4800	m ²
25 mm Rainfall Water Level	=	196.25	m
25 mm Rainfall Water Level Surface Area	=	5470	m ²
Extended Detention Zone Water Level	=	196.30	m
Extended Detention Zone Surface Area	=	5565	m ²
Gravitational Acceleration Constant (g)	=	9.81	m/s ²

25 mm Storm Event Drawdown Time

Average Surface Area of Pond (A_p)	=	5135	m ²
Starting Water Elevation Above Orifice (h_1)	=	0.35	m
Ending Water Elevation Above Orifice (h_2)	=	0.00	m
$t_{25\text{mm}}$	=	49.3	hours

Extended Detention Zone Drawdown Time

Average Surface Area of Pond (A_p)	=	5183	m ²
Starting Water Elevation Above Orifice (h_1)	=	0.40	m
Ending Water Elevation Above Orifice (h_2)	=	0.00	m
t_{ExtDet}	=	53.2	hours