City of Newport News Stormwater Site Plan Worksheet

(Must be on thePlans)
Please note this worksheet is provided for informational purposes and is not intended to exempt the developer from reviewing and complying with the latest federal, state, and local regulations.

OVERALL INFORMATION

Site Plan Title: Panda Express
Plan Address: 6104 Jefferson Ave — Subdivision Name:
Type of Development: New Development ☐ Redevelopment ☑ Right of Way ☐
HUC: 020802060906 — Latitude/ Longitude in Decimal Degrees: 37.0216, -76.4457
Discharges to (check all that apply): MS4 ☑ Wetlands ☐ River/Ditch/Stream ☐
Name of Receiving Waters: MS4, then Newmarket Creek
Parcel Tax ID: 269000728 — GPIN No (If Available):
Owner of Property: Panda Express, Inc.
Owner's Address: 1683 Walnut Grove Ave, Rosemead, CA 91770

SITE BREAKDOWN

Total Area of Disturbance: 0.81 acres 35,135 sq. ft.
List the land uses within the limits of disturbance only

	Pre Development			Post Development		
	Area (sq.ft.)	Area (acres)	Area (%)	Area (sq.ft.)	Area (acres)	Area (%)
Pervious - Forest/Open Space:						
Pervious - Managed Turf:	13109	0.30	37.31%	8675	0.20	24.69%
Pervious Surface Subtotal:	13109	0.30	37.31%	8675	0.20	24.69%
Impervious Surface Total:	22026	0.51	62.69%	26160	0.61	75.31%
TOTAL AREA:	35135	0.81	100.00%	35135	0.81	100.00%

Review and Check each to indicate acknowledgement:

- ☑ For developments using technical criteria IIC under the "grandfathering" clause, supporting documentation and calculations must be submitted with the initial site plan submission. A description of why the site qualifies should be included in the site's stormwater narrative on the plans.
- ☑ Development cannot cause flooding to adjacent or downstream properties. Site development must take into account current drainage patterns and the capacity of each individual site outfall discharge point, including those that are City or VDOT maintained. When evaluating discharge at an outfall point, all flow to that point must be included, such as flow from outside the disturbed area and off-site.
- ☑ The City of Newport News' General Notes, Erosion & Sediment Control General Notes, and the MS-19 Minimum Standards must be provided on all site plans. Latest editions are available on the Newport News Site & Subdivision website.
- ☑ Necessary construction permits must be obtained prior to any land disturbing activity. Failure to obtain these permits may result in a "STOP WORK" order being issued. As part of the Construction Permit process, a Stormwater Pollution Prevention Plan (if required) must be completed and submitted to the City's Engineering Department at the preconstruction meeting. This document must remain on site and be updated routinely to accurately reflect the up to date work on the site.
- ☑ Construction Record Drawings will be required as per the City's Construction Record Drawing administrative policy prior to project final acceptance and permit termination.

WATER QUANTITY - Design must satisfy one of the following:

☑ **Channel Protection (*9VAC25-870-66.B)* AND Flood Protection (*9VAC25-870-66.C)***
☐ **Sheet Flow (*9VAC25-870-66.D)***

*****NOTE: Per email correspondence with Beatriz Patino (City of Newport News – Department of Engineering), velocity of 4 ft/s in 2-yr, 24-hr storm is acceptable related to channel protection (SMP Enclosure 9).**

WATER QUANTITY - CHANNEL PROTECTION *Refer to 9VAC25-870-66.B for instructions*

(*Please provide documentation on the Plans and within the Calculations. Provide for each discharge point leaving site:)*

OPTION A: *The channel conveys the post development peak flow rate from the 2-year 24-hour storm without causing erosion ($V_2 < V_{ALLOW}$) and contains the 10-year storm within its banks ($DPTH_{10YR} < DPTH_{CHNL}$.) Receiving channel **must** be analyzed to the **Limits of Analysis (below)**.*

OPTION B: *The post development discharge from EACH discharge point separately satisfies the Energy Balance equation using the 1-year 24-hour storm. This option does **NOT** require further analysis of receiving channel.*

OPTION C *RESTORED: Development functioning consistent with restored system*

Discharge Point from Site (Show on Plans)	Discharge Channel	V_2	V_{ALLOW}*	$DPTH_{10YR}$	$DPTH_{CHNL}$	Q_{POST}	RV_{POST}	IF	Q_{PRE}	RV_{PRE}	$Q_{POST} \times RV_{POST}$		$IF \times Q_{PRE} \times RV_{PRE}$	Option C
EX-MH-1	☒ Manmade ☐ Natural	3.91	15	0.59	2.5							≤		☐ Yes
	☐ Manmade ☐ Natural											≤		☐ Yes
	☐ Manmade ☐ Natural											≤		☐ Yes
	☐ Manmade ☐ Natural											≤		☐ Yes

**Allowable velocity from VESCH Table 5-14, Table 5-22, VDOT PC-1, or V_{ALLOW} = 15fps for concrete pipes and gutters*

Limits of Analysis: Required **For OPTION A above only**
-analyze the receiving channel at critical analysis points TO a point where: (*Provide calculations for each analysis point)* ***Use A or B***

☐ A. The site's contributing drainage area is less than or equal to 1% of the total watershed, ***or***

Discharge Point (from above): — CDA to Discharge Pt: acres — 1% Total Watershed Area: acres

Analysis Point	CDA	V_2	V_{ALLOW}	$DEPTH_{POST-10}$	$DEPTH_{CHNL}$	Analysis Point	CDA	V_2	V_{ALLOW}	$DEPTH_{POST-10}$	$DEPTH_{CHNL}$

☐ B. The site's peak flow rate of the 1-year storm is less than or equal to 1% of the 1-yr predevelopment peak flow rate

Discharge Point (from above): — Site Peak Flow (1-yr storm): cfs — 1% Pre Peak Flow (1-yr storm): cfs
Discharge Point (from above): — Site Peak Flow (1-yr storm): cfs — 1% Pre Peak Flow (1-yr storm): cfs

SITE PLAN AND WATER QUALITY REQUIREMENTS

The following items are required based on the amount of land disturbance, presence of CBPA, and type of plan. Water Quality calculations must be completed using the Virginia Runoff Reduction Method (VRRM) spreadsheet and a copy of entire spreadsheet provided in the calculations. Check each item provided:

Project Land Disturbance Area (**LDA**)	In a **CBPA**?	Part of a Common Plan of Development	**E&SC Plan** *9VAC25-840 Erosion & Sediment Control Plan*	**Water Quantity** *9VAC25-870-66*	**Water Quality** *9VAC25-870-63 select from Criteria below*	Full **SWMP** *9VAC25-870-55 Stormwater Management Plan*
☐ **2,500sf ≤ LDA ≤ 10,000sf**	☐ No	☐ No	☐			
		☐ Yes	☐	☐	☐1 ☐3 ☐4 ☐5	☐
	☐ Yes	☐ No	☐	☐	☐1 ☐3 ☐4 ☐5	
		☐ Yes	☐	☐	☐1 ☐3 ☐4 ☐5	☐
☑ **10,000sf ≤ LDA ≤ 1 acre**	☑ No	☑ No	☑	☑		
		☐ Yes	☐	☐	☐1 ☐3 ☐4 ☐5	☐
	☐ Yes	☐ No	☐	☐	☐1 ☐3 ☐4 ☐5	☐
		☐ Yes	☐	☐	☐1 ☐3 ☐4 ☐5	☐
☐ **LDA > 1 acre**	☐ No	☐ No	☐	☐	☐1 ☐2 ☐4 ☐5	☐
		☐ Yes	☐	☐	☐1 ☐2 ☐4 ☐5	☐
	☐ Yes	☐ No	☐	☐	☐1 ☐2 ☐4 ☐5	☐
		☐ Yes	☐	☐	☐1 ☐2 ☐4 ☐5	☐

Water Quality Criteria:
1 – New Development • • • • • • *Total Phosphorus (TP) load cannot exceed 0.41 lbs/ac/yr*
2 – Redevelopment – NO net increase in impervious cover, LDA ≥ 1 acre • • • • • • *Total Phosphorus must be reduced 20% below pre-dev phosphorus load*
3 – Redevelopment – NO net increase in impervious cover, LDA < 1 acre • • • • • • *Total Phosphorus must be reduced 10% below pre-dev phosphorus load*
4 – Redevelopment – NET increase in impervious cover • • • • • • *New Increased Imp. area–Criteria 1 plus Remaining area-Criteria 2 or 3 (based on total LDA)*
5 – Redevelopment – LINEAR, NET increase in impervious cover • • • • • • *Total Phosphorus must be reduced 20% below pre-developed phosphorus load*[1]

Phosphorus Removal Required for Project: lbs/yr
Total Phosphorus Removal Achieved: lbs/yr
Phosphorus Removal Achieved On-site: lbs/yr **Phosphorus Removal Acquired Off-site:** lbs/yr **Excess:** lbs/yr
Credits Purchased?: ☐ Yes *(Provide proof of credit purchase)* Name of Bank:
☐ No

1 – Linear UTILITY projects can be considered maintenance when the site is returned to predeveloped conditions after completion and no change occurs in impervious area and runoff characteristics. See DEQ Guidance Memo No. 15-2003 for requirements and qualifications.

WATER QUANTITY - FLOOD PROTECTION *Refer to 9VAC25-870-66.C for instructions*

(*Please provide documentation on the Plans and within the Calculations. Provide for all discharge points leaving site:)*

OPTION A: *Confine the post developed peak flow rate for the 10-year 24-hour storm within the system. Receiving channel **must** be analyzed to the **Limits of Analysis** **(below).** ($Q_{POST-10} < Q_{SYSTEM\ CAPACITY}$)*

OPTION B: *Release a post developed peak flow rate for the 10-year 24-hour storm that is less than the pre developed peak flow rate for the 10-year 24-hour storm. This option does **NOT** require further analysis of receiving channel. ($Q_{POST-10} < Q_{PRE-10}$)*

Discharge Point from Site (Show on Plans)	Condition	Option A $Q_{SYSTEM\ CAPACITY}$	Option A $Q_{POST-10}$	Option B Q_{PRE-10}	Option B $Q_{POST-10}$
MS4	☑ No Localized Flooding (Option A) ☐ Existing Localized Flooding (Option A or B)			5.99	5.94
	☐ No Localized Flooding (Option A) ☐ Existing Localized Flooding (Option A or B)				
	☐ No Localized Flooding (Option A) ☐ Existing Localized Flooding (Option A or B)				

Limits of Analysis: Required **For OPTION A above only ($Q_{post} > Q_{pre}$)**,
-analyze the receiving channel at critical analysis points TO a point where: (*Provide calculations for each analysis point)* ***Use A, B, or C***

☐ A. The site's contributing drainage area is less than or equal to 1% of the total watershed, ***or***

Discharge Point (from above): — CDA to Discharge Pt: acres — 1% Total Watershed Area: acres

Analysis Point	CDA	V_{2YR}	V_{ALLOW}	$DEPTH_{10YR}$	$DEPTH_{CHNL}$	Analysis Point	CDA	V_{2YR}	V_{ALLOW}	$DEPTH_{10YR}$	$DEPTH_{CHNL}$

☐ B. The site's peak flow rate from the 10-year storm is less than or equal to 1% of the 10-yr predeveloped peak flow rate from the 10-yr storm prior to implementing control measures, ***or***

Discharge Point (from above): — Site Peak Flow (10-yr storm): cfs — 1% Pre Peak Flow (10-yr storm): cfs
Discharge Point (from above): — Site Peak Flow (10-yr storm): cfs — 1% Pre Peak Flow (10-yr storm): cfs

☐ C. The stormwater conveyance system enters a mapped floodplain: Discharge Point (from above): Name of Mapped Floodplain:

WATER QUANTITY - SHEET FLOW *Refer to 9VAC25-870-66.D for information*

(*Please provide documentation on the Plans and within the Calculations. Provide for all discharge points leaving site:)*

Sheet flow from the site must not cause erosion, sedimentation, or flooding of down gradient properties. The post development peak flow rate from the two-year 24-hour storm must not cause erosion ($V_2 < V_{ALLOW}$). Depth of flow must be less than 1 inch. If runoff is sheet flow and meets these conditions, no further water quantity controls are required.
(Channel protection & flood protection requirements are not necessary)

Discharge Point from Site (Show on Plans)	CDA	Q_{PRE-10}	$Q_{POST-10}$	$Depth_{POST-10}$	V_{2-POST}	V_{ALLOW}*
Adjacent Props.	2711	1.77	0.38			

**Allowable velocity from VESCH Table 5-14 or Table 5-22*

STORMWATER MANAGEMENT FACILITIES (SWMF)

The BMP Clearinghouse must be used for the design and designation of all Storm Water Management Facilities, for both water quality and quantity. Label and number each SWMF on the site plan. Provide calculations and supporting documentation for all facilities.

Stormwater Design Criteria: IIB Clearinghouse ☑ IIB Previously Permitted ☐ -Project & Date:
IIC Grandfathered ☐ IIC Previously Permitted ☐ -Project & Date:
Is Low Impact Development Implemented? Yes ☐ No ☐

SWMF INFORMATION
Include ALL facilities for WATER QUALITY and QUANTITY. List each one separately.

SWMF No. *(Label on plans)*	Type of SWMF and Level	DEQ Spec. No.	Eff. (%) RR	Eff. (%) TP	Pretreat Req? (Y/N) *Include table below*	TP Removal (lbs/yr)	TN Removal (lbs/yr)	Water QUALITY Treatment Volume[1] (cubic ft) Required	Water QUALITY Treatment Volume[1] (cubic ft) Provided	Water QUANTITY Volume[2] (cubic ft) Required	Water QUANTITY Volume[2] (cubic ft) Provided
1	UGD	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	720	720

Area	Pre Development Pervious Area (sq.ft.)	Pre Development Imp. Area (sq.ft.)	Post Development Pervious Area (sq.ft.)	Post Development Imp. Area (sq.ft.)	Total CDA (sq ft)
Site	13109	22026	8675	26460	35135
All					
Site					
All					
Site					
All					
Site					
All					
Site					
All					
Site					
All					

1-WATER QUALITY VOLUME: Required treatment volume from design calculations/VRRM spreadsheet. Provided treatment volume is actual volume achieved.
2-WATER QUANTITY VOLUME: Required is the volume required to be detained for the system design storm (see Design Criteria Manual). Provided volume is actual storage volume achieved above treatment volume.

Review and Check each to indicate acknowledgement:

- ☑ The BMP Clearinghouse criteria must be used for the design, construction, maintenance, and operation of all SWMF's. SWMF layouts and details should be provided and accompany any installation and long term maintenance requirements within the plan set.
- ☑ For wet and detention ponds,1 foot of freeboard is required if there is an emergency spillway and 2 feet of freeboard is required if there is no emergency spillway.
- ☑ A SWMF Maintenance Agreement must be completed and recorded prior to site plan approval.
- ☑ For each facility provide a maintenance plan, disposal information, owner contact information, and maintenance funding source information on construction record plans.
- ☑ Access is provided for SWMF maintenance.
- ☑ Soil borings must be provided for all facilities which will require separation from the ground water table and all infiltration facilities prior to site plan approval.
- ☑ Provide protection for SWMF to ensure proposed location remains undisturbed during construction and sediment from unstabilized site cannot reach facility.
- ☑ Minimum slope required on all underdrains is 0.5%.
- ☑ All stormwater systems must be analyzed for the 100-year storm to verify no adverse rise in the HGL upstream, downstream, and on the project site.

Pretreatment Information
Provide information for applicable facilities above. Show and label pretreatment on plans. Requirements from BMP Clearinghouse Specifications.

SWMF No. *(above)*	# of Pre-treat Req		Type of Pretreatment	Treatment Vol Req	Treatment Vol Act	Label on plans (Y/N)	CDA (sq. ft.)	SWMF No. *(above)*	# of Pre-treat Req		Type of Pretreatment	Treatment Vol Req	Treatment Vol Act	Label on plans (Y/N)	CDA (sq. ft.)
1	N/A	1								1					
		2								2					
		3								3					
		1								1					
		2								2					
		3								3					

PANDA EXPRESS, INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

REVISIONS:

ISSUE DATE:

1	PERMIT/BID SET	02-12-21
2	CITY COMMENTS	08-17-21
3	CITY COMMENTS	10-22-21
4	CITY COMMENTS	12-15-21
5	CITY COMMENTS	01-27-22
	ISSUE FOR BID (DT)	02-04-22

DRAWN BY: LEB

PANDA PROJECT #: S8-21-D8164
PANDA STORE #: D-8164
ARCH PROJECT #: XXXXX-XXX

COMMONWEALTH OF VIRGINIA
Ray G. Flake
Lic. No. 0402062700
PROFESSIONAL ENGINEER
01/27/2022

Civil Engineering Services
Engineering, Land Planning, and Environmental
7705 Spicer Farm Lane
Fairview, Tennessee
37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

PANDA EXPRESS
TRUE WARM AND WELCOME
6104 JEFFERSON AVENUE
NEWPORT NEWS, VA 23605

STORMWATER SUMMARY TABLE
C05.6

XX-XX-XX