

VIRGIN TOWN

Staff Report — Proposed Ordinance No. 2026-XX – Grading, Excavation, and Earthwork

To: Virgin Town Council

From: Ryker Steglich, Town Planner, Sunrise Engineering

Date: May 19, 2026

Subject: Proposed Ordinance No. 2026-XX — Grading, Excavation, and Earthwork (VMC Section 16.8.62)

Meeting: Town Council Regular Meeting

AT A GLANCE

Application	Legislative — Town-Initiated Ordinance
Subject	Adoption of VMC Section 16.8.62 – Grading, Excavation, and Earthwork
Prepared By	Ryker Steglich, Town Planner, Sunrise Engineering
Date	May 19, 2026
Meeting	Town Council Regular Meeting
Next Step	Town Council action – adoption of Ordinance No. 2026-XX

I. BACKGROUND

Virgin Town does not currently have a grading ordinance. As development activity has increased, the absence of standards for grading, excavation, and earthwork has created challenges for ensuring that land disturbance activities are conducted safely, protect adjacent properties, preserve natural drainage patterns, and prevent erosion and sedimentation. Staff identified the need for a grading ordinance to establish a clear permitting framework, provide engineering oversight for larger projects, and protect public health, safety, and welfare.

This ordinance was prepared by the Town Planner and reviewed by the Town Engineer. The Planning Commission held a public hearing on and recommended approval of the ordinance, with a modification to the Emergency and Public Facility Projects exemption to address emergency septic system repairs and fire mitigation activities. The version before the Town Council incorporates that modification.

II. DESCRIPTION OF PROPOSED ORDINANCE

Proposed Ordinance No. 2026-XX adopts a new Section 16.8.62 of the Virgin Municipal Code establishing standards for grading, excavation, and earthwork activities within the Town. Key provisions include:

- **Purpose and Applicability:** The ordinance establishes standards to prevent erosion and sedimentation, protect natural drainage and topography, minimize landslide and slope instability risk, and promote safe engineering practices. No grading, excavation, filling, or clearing may commence without a permit, except as exempted.
- **Permit Tiers:** The ordinance establishes two permit tiers. A Standard Grading Permit is required for activities disturbing more than 2,000 square feet but not more than 1,000 cubic yards of natural grade. An Engineered Grading Permit is required for activities disturbing more than 1,000 cubic yards, and requires plans stamped by a licensed professional engineer.
- **Exemptions:** The ordinance exempts bona fide agricultural uses, minor residential landscaping, minor grading that does not disturb more than 2,000 square feet or change the natural grade, and emergency and public facility projects. The emergency exemption was expanded at the Planning Commission's recommendation to include emergency repair or replacement of on-site utility systems (including septic systems) and vegetation management or grading for fire mitigation purposes.
- **Pre-Activity Notice:** Persons claiming the agricultural or residential landscaping exemption above certain disturbance thresholds must submit written notice to the Community Development Director prior to commencing work. The Director has five business days to confirm the exemption applies or request a pre-activity meeting.
- **Application Requirements:** Standard permits require a minor grading and drainage plan. Engineered permits require stamped engineering plans, a drainage study, a soils engineering report, an erosion control plan, a SWPPP, a fugitive dust plan, and other supporting materials.
- **Master Grading Permit:** The ordinance allows a master grading permit for approved subdivisions, allowing individual lot grading in conformance with the approved master plan without a separate permit.
- **Inspections, Bonding, and Enforcement:** The ordinance establishes inspection requirements, requires a reclamation bond at 100% of the work value prior to the preconstruction meeting, and provides for stop-work orders, permit revocation, bond forfeiture, abatement, and civil penalties of up to \$750 per day for violations.

III. STAFF DISCUSSION — CUBIC YARD THRESHOLD

During review of this ordinance, a concern was raised regarding whether the 1,000 cubic yard threshold for the Engineered Grading Permit is appropriately calibrated to Virgin Town's soil

conditions and typical residential development patterns. Staff reviewed geotechnical investigation reports submitted with residential building permit applications received over the past twelve months to evaluate this question. The following is presented for the Council's consideration.

A. Virgin Town Soil Conditions

The geotechnical reports reviewed — covering six residential building sites in Virgin — consistently identify site soils as silty sand alluvial deposits with moderate to high potential for hydro-collapse and expansive soil conditions. The Utah Geological Survey geologic hazards mapping identifies virtually the entire Town as lying within high expansive soil and collapsible soil hazard areas. As a result, every geotechnical report reviewed required over-excavation and recompaction of the building pad prior to foundation construction. This is not a site-specific condition — it is a function of Virgin's geology and applies broadly across residential development in the Town.

B. Over-Excavation Requirements and Volume Estimates

Based on the geotechnical reports reviewed, the average over-excavation depth required in Virgin is 4.0 feet (range: 2.5 to 5.0 feet), with an average required extension of 4.5 feet beyond the building footprint on all sides, plus 6 inches of grubbing and stripping across the full pad area. Using these averages, staff estimated the volume of excavation (cut) generated by building pad preparation alone — excluding driveways, utility trenches, septic system excavation, and broader site grading — for dwelling sizes ranging from 1,200 square feet to the maximum allowed under the Town's dwelling standards (4,800 square feet, or 15% of the parcel, whichever is greater).

The table below presents these estimates. The cut volume reflects excavation only; structural fill placed back into the over-excavation zone is shown for reference but is not counted toward the threshold under the methodology discussed in Section III.C below, as that material returns to the same excavation.

Dwelling size	Pad area (sq ft)	Cut only (CY)	Fill (CY)*	Status vs. 1,000 CY	Fill counted toward threshold?
1,200 sq ft	1,905	317	282	Under	No — returns to same excavation
1,500 sq ft	2,278	380	338	Under	No — returns to same excavation
2,000 sq ft	2,886	481	428	Under	No — returns to same excavation
2,500 sq ft	3,481	580	516	Under	No — returns to same excavation
3,000 sq ft (typical)	4,067	678	603	Under	No — returns to same excavation

Dwelling size	Pad area (sq ft)	Cut only (CY)	Fill (CY)*	Status vs. 1,000 CY	Fill counted toward threshold?
3,500 sq ft	4,646	774	688	Under	No — returns to same excavation
4,000 sq ft	5,219	870	773	Under	No — returns to same excavation
4,800 sq ft (max standard)	6,128	1,021	908	At threshold	No — returns to same excavation
6,000 sq ft (15% of ~0.92 ac)	7,475	1,246	1,107	Over	No — returns to same excavation
8,000 sq ft (15% of ~1.22 ac)	9,691	1,615	1,436	Over	No — returns to same excavation

* Fill volume shown for reference only. Under the recommended cut-only methodology, fill returned to the same excavation does not count toward the threshold.

C. Ambiguity in the Current Threshold Language

The ordinance as drafted defines the Engineered Grading Permit threshold as activities that "disturb the natural grade of more than one thousand (1,000) cubic yards." The term "Grading" is defined to include both excavation and filling. However, the ordinance does not specify whether the threshold is measured based on cut volume only, fill volume only, or the combined cut-plus-fill total.

This ambiguity has practical significance. Under a combined cut-plus-fill reading, a home as small as 2,500 square feet would exceed the 1,000 cubic yard threshold based on pad preparation alone. Under a cut-only reading, the threshold is not reached until approximately 4,800 square feet — the maximum standard dwelling size. Staff recommends that the Council direct that the threshold language be clarified regardless of any decision on the threshold number itself.

D. Recommended Clarification — Cut-Only Methodology

Staff recommends that the threshold be measured on a cut-only basis, with a carve-out for net fill above the natural grade. This approach is appropriate for the following reasons:

- Cut is the primary disturbance event. Excavation generates erosion risk, dust, haul traffic, slope instability, and drainage impacts. Structural fill placed back into the same excavation is a restoration of grade, not a new disturbance event.
- On-site material reuse. The geotechnical reports reviewed consistently indicate that excavated on-site soils are suitable for reuse as structural fill. Counting the same material twice — once as cut and again as fill — does not reflect additional project complexity or off-site impact.

- Plain language support. The phrase "disturbs the natural grade" most naturally describes the removal of material from its natural position. Fill placed back into an engineered pad can be understood as restoring, not further disturbing, the grade.
- Net fill carve-out. Where a building pad is raised above the natural grade — as is sometimes required on lower-lying lots — the volume of fill above the natural grade represents a genuine topographic change. Staff recommends that this net fill volume count toward the threshold in addition to the cut volume.

Staff recommends the following clarifying language for the Engineered Grading Permit definition:

"Engineered Grading Permit means a grading permit required for activities that involve the excavation or removal of more than [X] cubic yards of earth material from its natural position, or that result in a net increase in grade elevation requiring the placement of more than [X] cubic yards of fill above the natural grade, and require engineered plans stamped by a licensed professional engineer."

E. Threshold Number — Information for Council Discussion

Under the cut-only methodology, the current 1,000 cubic yard threshold functions reasonably well for most residential development on flat sites. As shown in the table above, dwelling sizes up to approximately 4,000 square feet fall comfortably below the threshold based on pad preparation alone. The 4,800 square foot maximum marginally exceeds 1,000 cubic yards at 1,021 CY.

Two factors may push individual projects above the threshold even under cut-only measurement: (1) sites where the geotechnical engineer requires a raised building pad above natural grade, where net fill would add to the cut total; and (2) the pad preparation estimates above reflect the building footprint only — driveways, utility trenches, and septic system excavation are present on virtually every residential lot and will add additional volume, estimated conservatively at 100 to 300 or more cubic yards depending on lot configuration.

The practical effect of alternative thresholds under cut-only measurement is as follows:

- **1,000 CY (current ordinance):** Pad preparation alone reaches this threshold only at the 4,800 sq ft maximum dwelling size. Homes up to approximately 4,000 sq ft remain under the threshold on flat sites for pad prep only. When additional site grading elements are factored in, homes in the 3,000–4,000 sq ft range may approach or cross this threshold.
- **1,250 CY:** All dwelling sizes up to 4,800 sq ft remain under the threshold for pad preparation on a flat site, providing a buffer to accommodate raised pads and additional site grading without automatically triggering the engineered permit.
- **1,500 CY:** All standard dwelling sizes remain under the threshold even accounting for a raised pad of 1.5 feet above natural grade. Only larger homes on parcels where the 15% rule yields allowances above approximately 6,000 sq ft would approach this level.

If the Council chooses to modify the threshold, staff recommends that the change be incorporated into the ordinance prior to adoption, along with the clarifying language described in Section III.D above.

IV. FINDINGS AND RECOMMENDATION

Proposed Ordinance No. 2026-XX is authorized by Utah Code Annotated § 10-20-101 et seq. and is consistent with the Town's authority to regulate land use, development, and construction to protect the public health, safety, and welfare. The ordinance establishes a clear and tiered permitting framework for grading and earthwork activities, fills a significant gap in the Town's regulatory structure, and incorporates appropriate safeguards for erosion control, drainage protection, reclamation bonding, and enforcement.

The Planning Commission reviewed the ordinance at a duly noticed public hearing and recommended approval with the modification to the Emergency and Public Facility Projects exemption described above, which has been incorporated into the version before the Council.

Staff recommends that the Town Council:

- Adopt Ordinance No. 2026-XX establishing VMC Section 16.8.62 — Grading, Excavation, and Earthwork; and
- Direct staff to incorporate clarifying language into the Engineered Grading Permit definition specifying that the cubic yard threshold is measured on a cut-only basis, with a carve-out for net fill above the natural grade, as described in Section III.D above; and
- Provide direction on whether the cubic yard threshold should be adjusted in light of the analysis presented in Section III.E, and if so, at what level.