ORDINANCE NO. ___ OF 202_
TOWNSHIP OF PLAINS
LUZERNE COUNTY, PENNSYLVANIA

WHEREAS, Article V of the Pennsylvania Municipalities Planning Code authorizes the Township of Plains to regulate subdivisions and land development within the municipality by enacting a subdivision and land development ordinance and preparing amendments thereto within the Township of Plains; and

WHEREAS, lands suitable for non-residential development and/or redevelopment are within proximity of lands zoned for residential and/or conservation purposes; and

WHEREAS, understanding the relationships and compatibilities of non-residential and residential land development provides opportunity for the Township of Plains to regulate and to reinforce responsive planning and development solutions throughout the municipality; and

WHEREAS, understanding the locations, relationships and compatibilities between existing natural resources and proposed land development and/or redevelopment provides the Township of Plains with broader insight on the potential impacts that development and/or redevelopment within the municipality may create; and

WHEREAS, expansion of technical tools and/or evaluation criteria included within Chapter 22, Subdivision and Land Development, of the Township of Plains aids in balancing development and/or redevelopment impacts throughout the municipality ; and

WHEREAS, the Board of Commissioners of the Township of Plains seeks to promote development and/or redevelopment by adopting and implementing this subdivision and land development ordinance amendment; and

WHEREAS, the Board of Commissioners of the Township of Plains has given consideration to public comment and has determined that the adoption of this Subdivision and Land Development Ordinance amendment is in the best interests of the inhabitants of the Township and the general public; and

NOW, THEREFORE, BE IT ORDAINED AND ENACTED, by the Board of Commissioners of the Township of Plains as follows:

Section 1. Subdivision and Land Development.

1.1 Definitions.

Subdivision and Land Development Ordinance, Part 2, Section 202 (Definition of Terms) shall be amended to add and/or update the following terms and definitions:

(1) REMEDIAL INVESTIGATION/FEASIBILITY STUDY -- A full site characterization identifying the full extent of soil and groundwater contamination, identifying alternative remediation activities and evaluating the feasibility of the alternatives as well as the selection and implementation of remediation activities.

1.2 Geotechnical Study.

Subdivision and Land Development Ordinance, Part 4, Section 406. Preliminary Plans-Proposed Development shall be amended to add the following Subsection G. Geotechnical Study.

(1) A geotechnical investigation report shall be submitted for any non-residential land development plan proposed to be on a lot measuring ten (10) acres or greater.

(2) To determine the extent to which the presence, type and extent of existing surface and sub-surface natural resources are compatible with potential development, the following shall be completed:

(a) Preliminary slope stability investigation.

(i) The intent of the preliminary investigation is to determine the general geologic and subsurface conditions at the site and their impact on development, especially with respect to limitations/constraints on site grading, including cut slope and fill embankment construction and the capacity of natural soils to support development. The preliminary investigation is not to be considered a final, detailed, or comprehensive investigation of proposed site grading, but only a preliminary evaluation of anticipated limitations with respect to cut and fill slope construction. It shall be an aid to developing conceptual site grading and development plans. Adequate test borings, a minimum of one (1) boring per each acre of the site, extending to sufficient depths to evaluate general subsurface conditions at the site shall be performed. All borings shall extend at least to bedrock surface; sufficient borings shall procure adequate rock cores to evaluate anticipated deep cuts for site development.

(ii) Standard penetration tests (SPTs) are to be conducted in all test borings at no greater than three (3) foot vertical intervals in the soil mantle of all borings in compliance with American Society for Testing and Materials (ASTM) Test Designation: D1586, as amended. Where SPT refusal on bedrock is encountered prior to reaching the required depth, continuous NX, NQ or NQ-2 rock cores shall be procured as required for the engineering analysis. Thin-walled steel (shelby) tube samples of relatively undisturbed soil samples shall be procured from selected borings, if and where required for

physical laboratory testing to determine relevant soil properties for the preliminary engineering analysis.

(iii) Groundwater encountered in each test boring is to be recorded during drilling operations and twenty-four (24) hours after completing each boring.

(iv) The borings shall be accurately located in the field. Ground surface elevations shall be obtained at each boring. The final boring locations and their ground surface locations must be shown on a to-scale topographical survey.

(v) A suitable boring log shall be provided for each boring. At minimum, the logs shall include: boring designations; SPT results; depths of strata encountered; percent core recoveries and rock quality designations (RQDs) of rock cores; date boring was drilled; groundwater information; types and descriptions of geomaterials encountered; comments or notes regarding voids, boulders, obstructions, or any other unusual subsurface conditions encountered.

(vi) A written report prepared and signed by the professional geo-technical engineer licensed in the Commonwealth of Pennsylvania performing the preliminary investigation shall be submitted to the Township. The report shall, at a minimum, include: a description of the existing surface and subsurface site conditions; a review of the site geology and geohydrology; a discussion of any slope movements, sloughs, landslides, rock falls, or mining on or adjacent to the site, and an evaluation of their existing and/or potential impact on the site; the test boring logs and laboratory test results and the to-scale boring location plan. The report shall also include preliminary geo-technical engineering recommendations regarding apparent limitations/constraints on grading for land development, including apparent stable grades for proposed cut slopes and fill embankments. Any general measures required to provide for long-term stability, including, but not limited to, drainage requirements, benching, erosion protection, and subgrade preparation shall also be discussed in the report. This preliminary investigation report will not be considered a detailed engineering evaluation of site grading. The Township Engineer shall review the report and shall provide a summary recommendation to the Township.

(b) Comprehensive slope stability investigation.

(i) Upon assessment of the Preliminary slope stability investigation findings the Township Engineer may require a comprehensive slope stability investigation.

The intent of the comprehensive investigation is to determine the stability of proposed grading operations and develop detailed engineered measures to provide for long-term slope stability. Test borings extending to sufficient depths to evaluate proposed grading are to be performed. Specifically, borings are to be located at the toes (base) of proposed fill embankments supporting roads or structures, or are eight (8) feet or greater in height and will be graded to a slope steeper than four (4) horizontal to one (1) vertical (4:1). Sufficient borings shall be located in cut slope areas supporting roads or structures, or that is greater than six (6) feet in height and will be graded to a slope steeper than four and one-half (4.5) horizontal to one (1) vertical (4.5:1). The borings shall extend at least to bedrock surface but must also extend to a depth of at least five (5) feet beyond the anticipated cut depth.

(ii) Standard penetration tests (SPTs) shall be conducted in all test borings at no greater than three (3) foot vertical intervals in the soil mantle of all borings in compliance with American Society for Testing and Materials (ASTM) Test Designation: D1586, as amended. Where SPT refusal on bedrock is encountered prior to reaching the required depth, continuous NX, NQ, or NQ-2 rock cores shall be procured as required for the engineering analysis. Thin-walled steel (shelby) tube samples of relatively undisturbed soil samples shall be procured from selected borings, if and where required for physical laboratory testing, to determine relevant soil properties for the engineering analysis.

(iii) Groundwater encountered in each test boring should be recorded during drilling operations twenty-four (24) hours after completing each boring.

(iv) The borings should be accurately located in the field. Ground surface elevations shall be obtained at each boring. The final boring locations and their ground surface locations must be shown on a to-scale topographical survey that includes existing contours and proposed site grading contours.

(v) A suitable boring log shall be provided for each boring. At minimum, the logs shall include: boring designation; SPT results; depths of strata encountered; percent core recoveries and rock quality designations (RQDs) of rock cores; date boring was drilled; groundwater information; types and descriptions of geomaterials encountered; comments or notes regarding voids, boulders, obstructions, or any other unusual subsurface conditions encountered.

(vi) A professional geotechnical engineer licensed in the Commonwealth of Pennsylvania shall complete a quantitative slope stability analysis of proposed

cut slopes and fill embankments. At minimum, test boring and relevant laboratory soil or rock test results, site groundwater and surface water findings, anticipated surcharge and/or hydrostatic loads/conditions and any other factors affecting the proposed slopes shall be included in the analysis. The slope stability analysis must be based on a method accepted by the geo-technical engineering community, and that has been published in an accepted engineering text book, journal, or proceedings. The analysis shall ultimately provide a factor of safety (FS) against movement/failure of the proposed slope. A slope will generally be considered stable in the long term when the FS>1.5, unless special circumstances, as approved by the Township, shall be allowed. Various slope/embankment construction scenarios can be analyzed by the engineer, but no proposed slopes/embankments indicating a FS less than that approved will be deemed acceptable.

(vii) The written report, prepared and signed by the professional engineer performing the slope stability analyses, shall be submitted to the Township. The report shall, at minimum, include: a description of the existing surface and subsurface site conditions; a review of the site geology and geohydrology; a discussion of any slope movements, sloughs, landslides, rock falls, or mining on or adjacent to the site, and an evaluation of their existing and/or potential impact on the site; subsurface profile drawings depicting all relevant parameters of the slopes that were analyzed; a discussion of the slope stability analyses; conclusion(s) regarding the stability of proposed site grading; the test boring logs and laboratory test results; a copy of the calculations/computer output for the stability analyses; and the to-scale boring location plan.. With respect to slope stability, the report shall also include recommendations, as required for: grades for stable cut slopes and fill embankments; drainage requirements; subgrade preparations; benching requirements; suitable fill material, compaction, and moisture requirements, erosion protection requirements, retaining structures, if necessary; and limitations or constraints to proposed slope construction. The report will be reviewed by the Township Engineer, and, whereas, the Township Engineer shall provide a summary recommendation to the Township.

(c) If the Geotechnical Study indicates that the proposed site is likely to be degraded based upon proposed land development demands, then the applicant must conduct a Site Investigation in accordance with the ASTM guidelines for a Site Investigation to identify areas of the property impacted by environmental degradation and a Remedial Investigation / Feasibility Study to identify the full extent of soil and ground water contamination and to identify and evaluate the feasibility of remediation alternatives. The Site Investigation and

Remedial Investigation / Feasibility Study evaluations shall be in conformance with the guidelines of the governing state or federal regulatory agency.

1.3 Tree Survey.

Subdivision and Land Development Ordinance, Part 4, Section 406. Preliminary Plans-Proposed Development shall be amended to add the following Subsection H. Tree Survey.

(1) A tree survey shall be submitted for any non-residential land development plan proposed to be on a lot measuring ten (10) acres or greater.

(2) A Tree Survey shall be conducted within a 200-foot depth of the entire perimeter of the property to identify any and all native trees of a six (6) inch caliper (diameter at breast height, or DBH) in each 100 linear feet of the perimeter length and to identify the number of trees qualifying for permissible credit per criteria below. For each eight (8) 6" trees located within each 20,000 sf perimeter area, the Applicant shall be permitted to reduce buffer yard requirements by twenty percent (20%).

(a) The tree survey plan shall be presented to the Township at a public meeting to confirm compliance with the requirements of this section and any other applicable requirement within this code. Plans may be required prior to said meeting if an on-site meeting is required by the Township Engineer.

(b) The tree survey plan shall:

(i) Identify the size, species, and location of all existing trees having a DBH mentioned above, denoting preserved tree/s and removed tree/s.

(ii) Except for trees in severe decline and hazard trees, identify any tree having a DBH of six inches or greater, removed within five years prior to the submission of an application. Any such tree shall be shown on the tree survey plan as a "removed tree" and shall be replaced in accordance with this chapter.

(iii) Provide a comprehensive list of all living and healthy trees throughout the entire lot, having a DBH of six inches or greater, proposed for removal including those removed within five years prior to the submission of an application, with their respective size in DBH.

(iv) Identify any heritage tree/s and boundary tree/s individually on the tree survey plan.

(3) The preservation of as much existing vegetation as physically feasible is preferred for the use of screening, including the preservation of mature trees of six (6) inches in caliper or greater.

(a) Based on the results of the Tree Survey, the Township may, upon recommendation by the Township Engineer and Planning Commission, determine that existing topography and/or vegetation constitutes all or part of the required landscape buffer yard.

(4) Post-construction. Calculation of preserved trees remaining after construction shall be performed by the Township Engineer. In the event the completed project is not in compliance with the approved schedule of preserved trees on the final plan, the applicant may be required to complete a mitigation plan.

1.4 Water Study.

Subdivision and Land Development Ordinance, Part 4, Section 406. Preliminary Plans-Proposed Development shall be amended to add the following Subsection I. Water Study.

(1) A Water Study, also for the purposes of this Ordinance referred to as a water resources evaluation report, shall be submitted for any non-residential land development plan proposed to be on a lot measuring ten (10) acres or greater.

(2) To further understand the potential impacts of development/redevelopment on existing natural resources and to complement other requirements of this Ordinance, the Applicant shall submit a water resources evaluation report prepared by a professional engineer licensed in the Commonwealth of Pennsylvania, which shall contain, but not be limited to, the following. Final copies of all plans, specifications and reports shall also be submitted to the municipality.
   (a) A suitable map of the watershed for any and all named streams within which the project is proposed (a United States Geological Survey quadrangle map is usually sufficient), with existing and proposed development areas presented on the map.
   (b) Suitable maps and drawings showing all existing natural and constructed drainage facilities affecting the subject property.
   (c) Hydrologic (watershed) and water feature boundaries, including all areas flowing to the proposed project, existing streams (including first order and intermittent streams), springs, lakes, ponds or other bodies of water within the project area.
   (d) Notes pertaining to and locations of existing standing water, areas of heavy seepage, springs, wetlands, streams and hydrologically sensitive areas. The 25 Pa. Code Chapter 93 Water Quality Standards Use Designation must also be provided on the plan.
   (e) One-hundred-year flood elevations for any special flood hazard areas on or within 100 feet of the property. For redevelopment sites, also show the ten- and twenty-

five-year flood elevations for any special flood hazard areas on or within 100 feet of the property. The source of these elevations shall also be shown on the plans.

(f) A wetland delineation report for the project site with a location map identifying wetland areas, if any were found.

(g) A plan of the proposed stormwater drainage system attributable to the activity proposed, including runoff calculations, stormwater management practices to be applied both during and after development, and the expected project time schedule.

(h) The design computations for all proposed stormwater drainage systems, including storm-drain pipes, inlets, runoff control measures and culverts, drainage channels, and other features, facilities and stormwater management practices.

(i) The effect of the project (in terms of runoff volumes and peak flows) on adjacent properties and on any other stormwater collection system that may receive runoff from the project site and specifics of how erosion and flooding impacts to adjacent properties will be avoided or otherwise mitigated.

(j) Complete delineation of the flow paths used for calculating the time of concentration for the predeveloped and post-developed conditions.

(k) Construction details sufficient to completely express the intended stormwater design components consistent with this chapter.

(l) A listing of all permits required for the site, providing the status of the permit application(s) and approval(s).

(m) All adjacent property owners shall be notified of the project and its stormwater and BMP installation. Legal proof of this notification must be provided to the municipality.

(3) Wellfield Quality Study. An inventory of all water wells, public or private, located within 1,250 feet of the lot lines of the property shall be compiled. Testing of all inventoried wells shall then be completed to establish the baseline water quality of the wells prior to the establishment of the structures, subject to consent of the lot owner. Where a property owner refuses to grant access for baseline testing, the Applicant shall document such refusal in writing and shall be deemed to have satisfied the baseline testing requirement for that well. Upon receipt of a complaint by the Township that appears to be reasonably related to the project, the Township may request and the Applicant shall offer and undertake, if permitted by the lot owner, well water testing. In any event, an owner or operator shall not be required to undertake well water testing more than once in any 12-month period. If a property owner refuses access for testing, the Applicant shall have no obligation to conduct testing of that well pursuant to the foregoing.

(4) Water Pollution and Containment. A project shall include containment systems to prevent chemicals, fire suppressant agents, or similar hazards, including PFAS-classified chemical compounds, from contaminating soil, surface water, groundwater and public or private wells, and to minimize the risk of human exposure.

(a) Detailed information on containment systems proposed to intercept chemicals, fire suppressant agents, or similar hazards, including PFAS, from reaching the soil, surface water, and groundwater.

(b) Pre- and post-development water well testing shall be used to assist in determining the cause of any water well degradation. If that degradation is determined to be caused by the project, the Owner and/or Operator shall be responsible for restoring the water quality to that of the baseline study as highlighted in the section.