

## APPENDIX B1 – GUIDELINES FOR PREPARATION OF A DRAINAGE IMPACT REPORT

### When is a Drainage Impact Report required?

- (a) A drainage impact report may be required for properties served by other than minimum use driveways.
- (b) If the Applicant or PennDOT determines that there may be an increase in the flow rate or flow velocity of water onto the highway or into highway drainage facilities as a result of action authorized by the permit, or that there may be an increase in the flow rate or flow velocity of water onto adjacent properties as a result of action authorized by the permit, a drainage impact report shall be submitted with the application.

### Preparation of a Drainage Impact Report

- (a) General. When a drainage impact report is required, the Applicant is responsible for assessing the overall effect of drainage flow rate and flow velocity associated with the proposed development.
  - (1) The Applicant is responsible for data collection efforts.
  - (2) The report shall be conducted under the supervision of a person who possesses a professional engineer's license issued by the Pennsylvania State Registration Board for Professional Engineers, who shall affix a seal to the report, or may be conducted by other persons authorized by law.
  - (3) Upon receipt of a completed report, PennDOT will review the Applicant's assessment on whether drainage system enhancements are needed to mitigate drainage impacts.
- (b) Drainage impact report contents. The drainage impact report shall contain the following:
  - (1) Cover sheet and plans. The drainage impact report shall include a cover sheet and plans stating the name and principle address of the property owner, the type and purpose of the development and other pertinent information. Plans shall include the plan scale, the plan contour interval, the source of the information, and the date of information.
  - (2) Contour plans. The drainage impact report shall include contour plans identifying the total drainage area in which the development is located, with both the drainage area and development labeled and outlined. If requested by PennDOT, the drainage impact report shall also include a United States Geological Survey map showing the drainage area affected by the development.
  - (3) Highway plans. The drainage impact report shall include a field verified location map and highway plans identifying the drainage system into which the drainage area containing the development will drain.
  - (4) Existing conditions. The drainage impact report shall include a plan identifying the land use for the drainage area before development, showing where existing drainage currently flows including surface and subsurface drainage systems with contributing areas clearly outlined and identified.
    - (i) The plan shall identify elevations with two-foot interval contours within the proposed development area of the site.
    - (ii) The plan shall identify relevant existing features and their locations including pavements, medians, structures, highway appurtenances, bridge locations and elevations, flow line

- (iii) inverts, guide points, gradients, utilities, right-of-way lines, property lines and buildings.
  - (iv) The drainage impact report shall include aerial or other photographs if requested by PennDOT.
- (5) Future conditions. The drainage impact report shall include a plan identifying the site drainage area after each development phase, and shall identify existing structures and features which will remain after each development phase.
- (i) The plan shall identify where the proposed structures and features will be located, including proposed surface and subsurface drainage systems.
  - (ii) The plan shall identify elevations with two-foot interval contours within the proposed development area of the site and shall outline and identify contributing areas.
- (6) Hydraulic computations. The drainage impact report shall include hydraulic computations identifying the effects of additional drainage flow rate and flow velocity on both the highway drainage within the right-of-way affected by the development and the drainage outside the right-of-way that is affected by the development.
- (i) The computations shall identify both pre-development and post-development conditions and shall specify the change in runoff.
  - (ii) The computations shall identify whether the available capacity of the highway drainage system will be adequate as a result of the development and whether there will be an increase in the flow rate or flow velocity from the developed property after the installation of proposed storm water detention systems.
  - (iii) The hydraulic computations relating to the highway drainage and any concentrated flows within the right-of-way shall be developed consistent with the procedures and criteria in Design Manual, Part 2, and pertinent policy directives.
  - (iv) The hydraulic computations relating to the drainage outside the right-of-way shall be developed in accordance with procedures and criteria acceptable to the Commonwealth or governmental bodies.
- (7) Recommended remedies. If the analysis indicates that the available capacity of the highway drainage system will not be adequate due to an increase in the flow rate or flow velocity, or that there will be an increase in the flow rate or flow velocity from the developed property, the drainage impact report shall include a description of proposed actions which will remedy the identified deficiencies, including hydraulic computations, arranged by location and type of remedy. The remedies may not include projects programmed by the Commonwealth or other governmental bodies.
- (8) Storm Water Management Act. If the proposed development is located within an area which has an approved watershed storm water management plan and ordinances pursuant to the Commonwealth's Storm Water Management Act (32 P.S. § 680.1--680.17), the drainage impact report shall demonstrate that proposed post-development conditions are consistent with the standards of the individual watershed storm water management plan and shall include a consistency letter from the affected municipality.
- (9) Summary. The drainage impact report shall include a clear, concise description of the report findings, and shall include recommended remedies designed to ensure that post-development flow meets the requirements and standards of PennDOT.