

3.  Runoff hydrograph(s) for each basin/subbasin, for the required design storm event(s);
  4.  Stage-storage computations for any area such as a reservoir, closed basin/subbasin, detention area, or channel, used in storage routing;
  5.  Stage-discharge computations for any storage areas at a selected control point, such as a flow control structure or natural flow restriction;
  6.  Flood routings through on-site flow conveyance and storage areas;
  7.  Water surface profiles in the primary drainage system for each required design storm event(s);
  8.  Runoff peak rates and volumes discharged from the site for each required design storm event(s);
  9.  Design tailwater elevation(s) (peak stages) for each storm event at all points of discharge (include source or method of estimate);
  10.  Pump specifications and operating curves for range of possible operating conditions (if used in the system); and
  11.  Discharge rate comparisons for the mean annual, 25-year and 100-year, 24-hour design storm events and necessary erosion control measures and locations.
- f.  Provide a description of the engineering methodology, assumptions, and references for the drainage parameters listed above, and a copy of all computations, engineering plans, and design specifications used to analyze the system. Include basin-node-reach schematics and show the time of concentrations, flow conveyance structures, and flow comparison locations (Flow Evaluation Points or Critical Points) in the engineering plans and/or drainage maps. If a computer model is used for the analysis, provide the name of the model, the input and output GIS data layers listed below in digital format that were used in the hydrological analysis. Provide the relevant metadata, including the source data and map projection systems, for the existing and post-reclamation conditions for the proposed project. The data layers shall include the project boundary, topography, basins, land use, evaluation points, nodes, reaches, drainage patterns, time of concentration, and hydrologic soil groups. Provide the input and output data tables in digital table format, such as Excel, Access, or a similar format. N/A
- g.  If there will be no discharge, provide sufficient freeboard in compliance with Appendix I of the Applicant's Handbook, Volume I, in the stormwater management system to prevent the occurrence of overtopping. Provide the basis for determination of the freeboard, such as staging the applicable design storm event on the seasonal high water elevation (or control elevation) plus an effective freeboard. Perform a wave run-up analysis, if required.
- h.  For traversing works, in accordance with the applicable Applicant's Handbook, Volume II, provide the following: N/A
1.  Hydraulic calculations for all proposed traversing works; and
  2.  Water surface profiles showing upstream impact of traversing works.
- i.  For impacts to regulated floodplains, in accordance with the applicable Applicant's Handbook, Volume II, provide the following: N/A
1.  Location and volume of encroachment within regulated floodplain(s); and
  2.  Plans and calculations for compensating floodplain storage, if necessary, and calculations required for determining minimum flood elevations for buildings and roads.
- j.  For treatment other than or prior to containment, provide construction plans and calculations that address the required treatment volume and recovery, as well as stage-storage and design elevations, which demonstrate compliance with the water quality treatment design criteria in the applicable Applicant's Handbook, Volume II. If a computer model is used for the analysis, provide