
Section H: Supplemental Information for Stormwater Management Systems for Mines

Instructions: The supplemental information required by this section is in addition to the information required by Section A and Section C (if applicable) of this application. This section is only required for mines for which the Department has permitting, compliance, and enforcement responsibilities under the interagency operating agreements with the water management districts and mines within assumed waters regulated under Chapter 62-331, F.A.C., but is not applicable to borrow pits.

The design options and considerations applicable to stormwater management systems for mines are referenced in Section 8.2.7 and described in Appendix I of Volume I of the Applicant's Handbook. The applicant is strongly encouraged to contact the Department to arrange a pre-application review meeting prior to finalizing the proposed project activities, including monitoring well and piezometer installation and water quality sampling. The information requested below represents the level of information that is usually required to evaluate an application. Information can be provided within reports, plans and other documents. Provide a response after each item below indicating specifically where in the reports, plans, and other documents the information will be found. If an item does not apply to your project, indicate that it does not and proceed to the next item. The level of information required for a specific project will vary depending on the nature and location of the site and the activities proposed. Conceptual approvals generally do not require as much detail as a construction permit. However, providing a greater level of detail will reduce the need to submit additional information at a later date.

Part 1: Project Information and Environmental Considerations

- a. ☐ Provide a detailed description of the proposed activities, including specifics about the stormwater management system(s), water treatment methodologies, and operation and maintenance procedures for the construction (during-mining and reclamation) and post-reclamation (also known as "operation" or "post-development") conditions.

- b. ☐ Respond to the following items if Section C was not completed (because the proposed work or activity will not occur in, on, over, or within 25 feet of a wetland or other surface water):
 1. ☐ Identify the seasonal high water or mean high tide elevation and normal pool or mean low tide elevation for each wetland and other surface water, both within and contiguous to the proposed permit area. Include an aerial photograph identifying each area, the elevation source and datum, and method of evaluation.

 2. ☐ Describe how the proposed project will be designed to avoid adverse effects to public health, safety, or welfare or the property of others.

- c. ☐ Provide the results of percolation tests, soil boring logs, cross-sections, and stratigraphic thickness contour maps, if available, that are representative of the actual site conditions to the proposed excavation depth(s). Provide the hydraulic conductivity values and proposed average and maximum depths of excavation.
- d. ☐ Provide a hydrostratigraphic column that is representative of the proposed project site. Describe the hydrostratigraphic units and define all aquifer(s) and/or aquiclude(s) (semiconfining/confining beds) present at the project site. Identify the wet season high water table elevations for the proposed project area. Include the dates, datum, and methods used to determine these parameters.
- e. ☐ Changes to pre-construction groundwater elevations on the proposed mining site may adversely impact the hydrology of onsite or offsite wetlands and other surface waters (including lakes, streams, and spring discharges). Provide the following:
1. ☐ A hydrologic analysis, such as a seepage analysis, water budget analysis, and/or drawdown analysis, for the existing, construction, and post-reclamation conditions. State the assumptions, scope of the analysis, the source(s) of the data used in the calculation(s) and the name of the computer model or program, if used. If applicable, provide input and output Geographic Information System (GIS) data layers in digital format that were used in the hydrological analysis. Provide the relevant metadata, including data sources and map projection systems. Input and output data tables, such as excel, access, or a similar format, should also be provided in digital format.
 2. ☐ For a proposed water elevation maintenance system, such as a recharge system, provide a plan view drawing of the system indicating the source and routing of the water; a cross section drawing of the hydration system, injection well, or recharge ditch in relation to features such as the mine-cut face, cast overburden/seepage face, the ground surface, the overburden and matrix layers, and the water table; and a monitoring and maintenance plan for the system.

- f. ☐ Provide a water level monitoring plan for any avoided wetlands and other surface waters adjacent to the proposed project boundary or excavation. The monitoring plan shall include a staff gauge and/or piezometer location map, monitoring instrumentation, data collection methods, data recording and/or downloading frequency, available remedial measures, a typical gauge/piezometer schematic and datum, and reporting frequency and report contents. Propose a monitoring period that starts prior to mining and ends after the completion of reclamation.

- g. ☐ Identify public water supply wells within 1000 feet of the proposed extraction area. Identify the wellfield cone of depression, if available, well depths and screen or open-hole intervals, and source of information for public water supply wells.

- h. ☐ To the extent possible, through publically available information and field reconnaissance from the project boundary, identify private water supply wells located within 1000 feet of the proposed extraction area. This shall not be construed to require trespassing on the property of others. Provide the well construction details, if available.

- i. ☐ Provide ambient surface water and groundwater quality characterization for the proposed project for intervals extending to the proposed depth of mining. The applicant is strongly encouraged to arrange a pre-application meeting prior to performing monitoring well installation and water quality sampling activities.

- j. ☐ If the proposed project site is located within a mile of a karst-sensitive area, a springshed, other karst features, or a public supply wellfield, submit a geotechnical assessment report, which includes a location map of these features. Provide information about site grading or other stormwater management practices designed to direct runoff from any areas that are potential sources of pollutants into stormwater treatment areas that are designed, constructed, operated, and maintained in compliance with the requirements of the applicable Applicant's Handbook, Volume II, prior to any discharge to the mine excavation.

- k. ☐ If a floating dredge will be used, specify the approximate depth and area that will need to be excavated before the dredge will become operational. Describe the initial excavation method, including the approximate length of time from initiation of excavation to the time that the floating dredge will become operational. If temporary dewatering will be conducted, please provide the projected drawdown of the water table in the avoided wetlands. If necessary based on the results, provide protective measures such as the construction of recharge ditches. Describe any measures that will be used to manage the extracted water.
- l. ☐ If the water table will be augmented to use a floating dredge, specify the water source (e.g. offsite recycled wastewater) and pumping and conveyance system details.
- m. ☐ If the proposed project area is in the watershed of a first order stream (headwater), second order stream, etc., of a river where Minimum Flows and Levels (MFLs) have been established, provide a water quantity simulation representing the peak severance/dewatering conditions to demonstrate that the proposed activity will not contribute to violations of the established MFLs.
- n. ☐ Following reclamation, if a mine pit or reclaimed created lake will connect to offsite wetlands or other surface waters during storms less than the 25-year, 24-hour design storm event, or if the water body will have more than one property owner, then the water body meets the definition for "waters of the state". Waters of the state must meet the surface water quality standards of Chapter 62-302, F.A.C. To demonstrate the absence of such a connection, the applicant must show through volumetric calculations or hydrologic modeling that the mine pit or reclaimed created lake will have sufficient capacity when operating at the average annual water elevation (normal pool) for the storage of direct runoff and rainfall for the 25-year, 24-hour design storm event. If the proposed project will result in waters of the state in the post-reclamation condition, provide reasonable assurance that the surface water quality standards will be met.
- o. ☐ Identify the classification(s) (e.g. Class F-1, G-1, G-II, G-III and G-IV) of the groundwater in the proposed project area and immediate vicinity according to the designated uses provided in Rule 62-520.410, F.A.C.

- p. ☐ Provide the names, locations, and storage conditions for any chemicals that will be stored onsite. This includes all pH adjusters, water conditioners, and other material that will be used in the process water. Additionally, include how the chemicals will be utilized, e.g. blasting, vehicle maintenance, vegetation maintenance, and process water treatment. Identify separate containment areas on the construction plans that meet the requirements of the applicable Applicant's Handbook, Volume II for equipment maintenance and the storage of petroleum and hazardous substances.
- q. ☐ For previously-mined lands that are proposed for construction, provide the following:
1. ☐ Bathymetric map for each existing lake.
 2. ☐ Identify the existing lakes to be excavated deeper and the proposed maximum depth of excavation.
 3. ☐ Identify any onsite lake that has penetrated a confining layer between the water table aquifer and a deeper aquifer.
 4. ☐ Provide a discussion of the existing site-specific geology (including sand tailings, waste clay disposal, and overburden deposition and orientation, if known) and aquifers and aquitards.
- r. ☐ Provide all of the known historical and current activity information for the project area, such as specific crops grown, vehicle maintenance, waste disposal, and indicate the aerial extent of each activity on a plan map. Provide soil sample quality data, a summary of the soil characterization procedures, and sampling results. The applicant is strongly encouraged to arrange a pre-application meeting prior to performing soil sampling activities.

- s. ☐ Provide a hydrological analysis, as applicable, for proposed wetland mitigation (excluding permitted mitigation banks). If applicable, provide input and output GIS data layers in digital format that were used in the hydrological analysis. Provide the relevant metadata, including data sources and map projection systems. Input and output data tables, such as Excel, Access, or a similar format should also be provided in digital format. The hydrological analysis shall evaluate the wetland types and appropriate hydroperiods, historical and proposed hydrologic conditions, including whether the wetlands were perched, surface water dependent, seepage dependent, or groundwater-supported. Propose monitoring locations for piezometers and staff gauges, construction details, the measurement frequency, the data collection methodology, and reporting format.
- t. ☐ Applicants that elect to use alternative wetland mitigation associated with the mining of high-quality peat, in accordance with Section 373.414(6)(e), F.S., shall provide all information required by Chapter 62-348, F.A.C.
- u. ☐ If onsite and/or offsite applicant-responsible mitigation is proposed, submit a cost estimate for completing the mitigation, including monitoring and maintenance, as required by Section C of the application. For phosphate and limestone mines only, mitigation costs shall be presented as provided by Section 373.414(19), F.S. If the proposed mitigation costs exceeds \$25,000, provide draft financial assurance documents, as required by Section C of the application.
- v. ☐ For phosphate and heavy mineral mines, provide, within the footprint of the current ERP application, the number of acres of land mined before July 1, 1975; land mined from June 30, 1975 to the present; land to be mined; land disturbed before June 1, 1975; land disturbed from June 30, 1975 to present; land to be disturbed; land to remain undisturbed; and the sum of these acres.
- w. ☐ For fuller's earth mines, provide, within the footprint of the current ERP application, the number of acres of land mined or disturbed before July 1, 1975; land mined or disturbed from July 1, 1975 to October 1, 1986; land mined or disturbed from October 2, 1986 to present; land to be mined or disturbed, land to remain undisturbed; and the sum of these acres.

- x. ☐ For limestone and other resources mines that began operations on or before October 1, 1986, provide, within the footprint of the current ERP application, a figure that shows areas disturbed by mining operations on or before January 1, 1989 and the number of acres and current status for each area. Examples of status include: reclaimed, reclamation in progress, mined out, mining, disturbed only, stock piles, overburden piles, and tailings disposal. Include aerial photographs as a basis for this figure.
- y. ☐ For phosphate, heavy mineral and fuller's earth mines, provide, within the footprint of the current ERP application, the information below in acres for lands mined or disturbed prior to July 1, 1975. For limestone and other resources mines that began operations on or before October 1, 1986, provide the information below in acres for lands mined or disturbed on or before January 1, 1989.

	In Use*	Unreclaimed	Reclaimed
1. <input type="checkbox"/> Mined only			
2. <input type="checkbox"/> Mined – waste disposal use			
3. <input type="checkbox"/> Disturbed only			
4. <input type="checkbox"/> Disturbed by waste disposal			
5. <input type="checkbox"/> Total			
*For mining operations			

- z. ☐ For above grade settling or disposal areas provide the geometric characteristics of each area, including the average dike height (feet), dike crest elevation (feet & datum), maximum operating water level (feet & datum), crest width (feet), outside and inside slopes (below and above grade), effective area (acres), effective depth (feet & datum), effective pit bottom depth below grade (feet), and effective storage volume (acre-feet).
- aa. ☐ For phosphate mines, estimate the following information for each disposal site:

Waste Clay Disposal Site Designation	Site 1	Site 2	Site 3	Site 4
Disposal Acres				
Dam Height Above Grade (ft.)				
Minimum/Maximum/Average				
Type of Disposal				
Cap Thickness (ft.)				
Average Storage Depth (ft.)				
Storage (acre-feet)				
Infill Rate (Dry Tons/yr.)				
Percent Solids in Fill*				
Immediate Percent Solids**				

* At entry into CSA

**Point at which self-weight consolidation begins

- bb. ☐ For phosphate mines, provide the following drainage information and acreages based on the Florida Land Use Cover and Forms Classification System, Level III:

Drainage Information	Pre-mining Quantity	Pre-mining Acres	Post-reclamation Quantity	Post-reclamation Acres
1st order drainage basins				
2nd order drainage basins				
wetlands under 20 acres				
wetlands 20 acres or over				
Lakes (waterbodies)				

- cc. ☐ If the proposed project will include stream disturbances, provide a stream assessment and mitigation/reclamation plan that includes maps and an analysis of the existing streams. Identify the stream type (Rosgen Level II or other classification system approved by the Department), flow type (perennial, intermittent, or ephemeral), stream order, stream habitat quality, and channel lengths. Distinguish between natural streams and ditched or channelized natural streams and identify which streams are proposed for disturbance. The plan shall also describe how the streams proposed for disturbance will be reclaimed and include the reference reach or regional curve information used in the design, stream type, stream order, individual stream lengths and designs (dimension, pattern, and profile), and stream construction specifics, including construction staking, erosion control, streambank construction, riparian corridor revegetation, and in-stream habitat creation.

Part 2: Construction Plans

Provide clear, construction level detailed plans for the proposed project, including specifications, plan (overhead) views, cross section views (with the locations of cross section shown on the corresponding plan view) and profile (longitudinal) views. Include a scale, scale bar, county name, Section, Township, and Range, and a north arrow on each sheet. The plans must be signed, dated, and sealed by an appropriate Florida-licensed professional. These plans shall include cumulative information from all applicable sections of the application.

- a. ☐ Provide the project, permit, and property boundaries and total acreages, including distances and orientation from roads or other landmarks on a recent aerial legible for photo interpretation with a scale of 1 inch = 400 feet, or more detailed. The project boundary shall only include the portions of the property that will be altered or disturbed by permitted activities, e.g. surface areas where there will be construction, alteration, operation, maintenance or repair; abandonment; or removal of any stormwater management system, dam, impoundment, reservoir, work (including dredging or filling), or appurtenant work. The permit boundary includes the proposed project areas and mitigation areas. Include the date of the photo.
- b. ☐ Provide individual plans for the existing, during–mining (and intermediate stages, if necessary), and post-reclamation conditions. Include the following:
1. ☐ Topography extending at least 100 feet off the permit area shown on a recent aerial map. All topography shall include location and description of benchmarks referenced to NGVD 1929 or NAVD 1988 along with the conversion factor(s) if the application documents refer to more than one datum. Blend the proposed contours into the undisturbed contours in the construction and post-reclamation conditions.
 2. ☐ US Geological Survey topographic map.
 3. ☐ Provide existing and proposed maps accurately describing the vegetative community and landscape types. Generally, this is best done using the Florida Land Use and Cover Classification System (FLUCCS) (FDOT 1999) or the Florida Natural Areas Inventory Guide to the Natural Communities of Florida. Additional or alternative descriptions may also be used if the overall submittal provides a clear, complete, and scientifically accepted description of all vegetative community and landscape types. For vegetated areas dominated by exotic vegetation, use the descriptors representative of the native community type that was present prior to exotic infestation. Also identify each community with a unique identification number which must be consistent in all exhibits.

4. ☐ Wetlands and other surface waters to be impacted or avoided and mitigation areas, including acreages.
5. ☐ Undisturbed upland buffers adjacent to wetlands and other surface waters, including width of each buffer.
6. ☐ Areas and acreages to be excavated, the proposed mine cells and sequence of mining or excavation.
7. ☐ Staging/temporary overburden storage areas, product stockpiles areas, processing areas, and waste disposal areas (e.g. disposal areas for humate, waste clays, and tailings).
8. ☐ Utility, pipeline, equipment, dredge, and dragline crossings and corridors. Distinguish between temporary (single use) and long-term crossings and corridors. Provide an approximate length of time and schedule to perform the construction and removal activities for each crossing or corridor.
9. ☐ Impervious surfaces (including directly connected impervious surfaces), vehicle parking areas, and haul roads, including stormwater management systems for these areas.
10. ☐ Internal and external perimeter berms.

11. ☐ Recirculation ditches, recharge ditches, and stormwater ditches.
12. ☐ Connections/outfalls to wetlands or other surface waters.
13. ☐ Normal mine operation water elevation, the seasonal high and low water elevations, and the average annual water elevation.
14. ☐ All water management structures, volumes, and invert elevations.
15. ☐ Where the proposed water management system for a mine will partially replace an existing surface water management system, provide drainage plans and reports showing how the system outside of the mine will function as mining and reclamation proceed.
16. ☐ For phased projects where each phase is a stand-alone system, provide a master development plan clearly delineating the limits of each phase of construction.

17. ☐ For post-reclamation plans, show how areas subject to the reclamation requirements of Chapter 378, F.S., will meet the standards of the applicable reclamation rules. A separate Conceptual Reclamation Plan or a Notice of Intent to Mine shall be provided prior to the start of mining activities in accordance with the applicable reclamation rules. For mines using the provisions of Section 373.414(6)(b) or (c), F.S., for wetland mitigation, the Conceptual Reclamation Plan shall be provided with the ERP application.
- c. ☐ Where agricultural ditches are present, illustrate how the area hydrology will be altered due to the proposed project. Provide plan drawings that show the internal, perimeter, and surrounding agricultural ditches for the existing, construction, and post-reclamation conditions. Clearly indicate whether the perimeter ditches are within or outside the project area. Flow direction arrows (include any seasonal flow reversals with an explanation of use, if applicable) and proposed alterations to the ditches must be shown in each drawing. Provide maps that clearly depict the progression of ditch severance as the stormwater management system expands.
- d. ☐ Paving, grading, and drainage information for the existing, construction (and intermediate stages, if necessary), and post-reclamation conditions, which includes, but is not necessarily limited to, the following:
1. ☐ Plan view of proposed construction, including processing area and water quality treatment areas.
 2. ☐ Proposed elevations and/or profiles, including datum.
 3. ☐ Roadway, parking, and pavement grades.
 4. ☐ Floor slabs, walkways, and other paved surfaces.

5. ☐ Earthwork grades for pervious landscaped areas.
6. ☐ Perimeter site grading, tying back into existing grades.
7. ☐ Location of all water management areas, including elevations, dimensions, side slopes, and design water depths.
8. ☐ Location, size, and invert elevations of existing and proposed stormwater conveyance systems.
9. ☐ Vegetative cover plan for all on-site and off-site earth surfaces disturbed by construction.
10. ☐ Rights-of-way and easements for the system, including all on-site and off-site areas to be reserved for water management purposes (including access), and rights-of-way and easements for the existing drainage system, if any.

- e. ☐ Stormwater detail information, including but not necessarily limited to, the following:
1. ☐ Cross section of all stormwater management areas, including elevations, dimensions, crest widths, side slopes, and proposed stabilization measures (with location of the cross section(s) shown on the corresponding plan view).
 2. ☐ Provision for permanent stabilization of the slopes through the establishment of permanent vegetative cover or other appropriate methods.
 3. ☐ Detail of all proposed control structures, including elevations, dimensions, and skimmer, where applicable.
 4. ☐ Details of proposed stormwater management systems, such as underdrains, exfiltration trenches, vaults, and other proposed Best Management Practices (BMPs).
- f. ☐ Provide a cross sectional view of the reclamation lake(s) and shoreline. Show the lake configuration, including side slopes and grade-break; elevations for the shoreline; lake bottom elevation; the average (normal pool), seasonal high, and seasonal low water elevations; littoral zone; vegetation cover designation; and associated control structures.

- g. ☐ For limestone mines, provide a cross-sectional view of reclaimed sheer walls, including transition shelves and other means of access control. Refer to Rule 62C-36.008, F.A.C., for sheer wall design requirements. Provide a plan view showing the location and extent of areas to be reclaimed with sheer walls. For fuller's earth and other resources (gravel, sand, clay) mines provide a cross-sectional view of reclaimed high walls. Provide a plan view showing the location and extent of areas to be reclaimed with high walls. Refer to Rules 62C-38.008 or 62C-39.008, F.A.C., fuller's earth and other resources, respectively, for limits on steepness of slopes. Provide the appropriate geotechnical engineering study whenever the proposed slopes will be steeper than the limits provided by rule.
- h. ☐ Provide groundwater elevation contour maps showing existing, construction, and post-reclamation elevations extending at least 100 feet off the proposed permit area. All elevations shall be referenced to the common benchmark or datum (NGVD/NAVD) being utilized for the permit area. Cite the date and data source for the existing condition. If the elevations are compiled data, identify if the contours represent average seasonal high water, average annual, or seasonal low water table elevations.
- i. ☐ Provide a Federal Emergency Management Agency (FEMA) flood map (include the proposed permit boundary on the map).
- j. ☐ If the proposed project will impede or restrict the flow of offsite stormwater runoff, provide plan and cross-section figures showing the locations and elevations of the proposed berms and water control structures (to prevent erosion) that will allow offsite runoff to either enter the stormwater management system or be routed around the project area. Present these drainage conditions for the construction and post-reclamation scenarios.

- k. ☐ Provide the location of any nearby existing offsite features (such as wetland and other surface waters, municipal well fields, large irrigation wells, stormwater management ponds, gas pipelines, and buildings or other structures) which might be affected by or affect the proposed permit activities.
- l. ☐ Provide the digital GIS data layers for the wetlands, Land Reclamation Units, and mandatory mined areas and relevant metadata, including the source data and map projection systems for the existing and post-reclamation conditions for the proposed project.

Part 3: Stormwater Drainage and Treatment Information and Analyses

Provide drainage calculations signed, dated, and sealed by an appropriate Florida-licensed professional, and supporting documentation demonstrating that the proposed project meets the conditions for issuance under Rules 62-330.301(1)(a), (b), (c), and (e), F.A.C. **Larger mines or more complex mine plans require one or more intermediate stage maps or GIS data layers and drainage calculations to explain how the proposed water management system and offsite flows will change as mining and reclamation progress.** The plans and calculations shall include the following:

- a. ☐ Provide separate drainage maps for the existing, construction, and post-reclamation conditions that include the drainage patterns and basin/sub-basin boundaries. Provide the acreage for each basin/sub-basin and include flow direction arrows showing any off-site runoff being routed through or around the system, topographic information, and connections between wetlands and other surface waters below the 25-year 24-hour design storm event applied to the average annual water table. Merge the construction and post-reclamation elevation contours with the existing elevation contours in areas that will remain undisturbed.
- b. ☐ Identify the existing and proposed onsite hydrologic soil names and classifications (e.g. Type A, C, B/D, D). Reference the source, such as the U.S. Department of Agriculture/Natural Resource Conservation Service Soil Survey (NRCS), used in estimating the existing onsite hydrologic soil name and classifications. Provide maps, as appropriate, on which the permit area has been delineated.

- c. ☐ Indicate the existing and post-reclamation land use and land cover. Provide the acreages and percentages of the total project, for the following:
1. ☐ Impervious surfaces (and directly-connected impervious surfaces) excluding buildings, wetlands and other surface waters;
 2. ☐ Buildings;
 3. ☐ Pervious surfaces (green areas not including wetlands);
 4. ☐ Lakes, canals, retention areas, other open water areas; and
 5. ☐ Wetlands (Please refer to Section C to ensure consistency in wetland acreages).
- d. ☐ Identify the wetland and/or waterbody that will receive discharge from the stormwater management system. Provide the receiving wetland/waterbody seasonal high water or mean high tide elevation, including the dates, datum, and methods used to determine these elevations.

- e. ☐ Provide mine-wide drainage analyses for the existing and post-reclamation peak rates of discharge, volumes of runoff, and peak stages for the appropriate design storm events demonstrating that the proposed project meets the stormwater design criteria in the applicable Applicant's Handbook, Volume II. Account for all onsite depressional storage and offsite contributing areas. Refer to the applicable Volume II for the design storm event(s) that applies to the project area. Typically, the information includes the following:
1. ☐ Runoff characteristics, including area; runoff curve number or runoff coefficient; hydrologic soil classifications; and time of concentration for each drainage basin/subbasin in the existing and post-reclamation conditions;
 2. ☐ Design storms used including rainfall depth, duration, frequency, and distribution;
 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.
- 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:
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:
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 the name and a description of the model, the input and output data, and a justification for the model selected.
- k. ☐ If the receiving waterbody is known to be impaired, and/or has an established Total Maximum Daily Load (TMDL) or Basin Management Action Plan (BMAP), provide specific descriptions of all water quality parameters for which the waterbody is known to be impaired. Provide reasonable assurance that the proposed project will not contribute to violations of state water quality standards for TMDLs in accordance with the applicable Applicant's Handbook, Volume II.

- I. ☐ If the proposed project will have a direct discharge to a Class I, Class II, Outstanding Florida Waters (OFW), or Class III waters that are approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting, provide additional water quality treatment in accordance with the applicable Volume II.

Part 4: Construction Schedule and Techniques

Provide a construction schedule and a description of construction techniques, sequencing, and equipment. This information shall include, as applicable, the following.

- a. ☐ Access and staging of equipment.
- b. ☐ Location and details of the temporary erosion, sediment, and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-reclamation condition.
- c. ☐ A demolition plan for any existing structures to be removed.
- d. ☐ Dewatering plan details. Provide the dewatering location(s), methods to contain the discharge, methods of isolating dewatering areas, the period of time the dewatering structures will be in place, and the hydrologic monitoring plan. Contact the appropriate water management district regarding the need and requirements for a Consumptive Use or Water Use permit for dewatering.

- e. ☐ Methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge.

- f. ☐ Describe the measures that will be taken to protect and secure monitoring wells, piezometers, and staff gauges during mining and reclamation activities so that they will be available for water quality and/or quantity sampling through the duration of the permit. Also, describe how the elevations of the monitoring equipment will be surveyed and a schedule, if the elevations will be intermittently confirmed.

- g. ☐ Identify the schedules and parties responsible for completing hydrologic and vegetative monitoring, record drawings, and as-built certifications for the proposed project when completed.

- h. ☐ Provide a detailed "Erosion and Sediment Control Plan" in accordance with the requirements of the Applicant's Handbook, Volume I, Part IV, Erosion and Sediment Control.

- i. ☐ Provide the projected production and disposal schedule for waste materials, such as waste clay, humate, and tailings, by year and location. Provide the total storage capacity for each disposal location and the remaining capacity (if it is an existing disposal location).

- j. ☐ Provide a production and utilization schedule for the backfill materials to demonstrate that there is sufficient backfill material available to construct the proposed post-reclamation elevations.

Part 5: Operation and Maintenance and Legal Documentation

- a. ☐ Describe the overall maintenance and operation schedule for the proposed system.
- b. ☐ Identify the entity (or entities) that will be responsible for operating and maintaining the system (or parts of the system) to demonstrate that the entity (or entities) meet(s) the requirements of Section 12.3 of the Applicant's Handbook, Volume I. Provide information for the construction and post-reclamation conditions.
- c. ☐ If different from the permittee, provide a draft document enumerating the enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life, and documentation of the entity's financial responsibility for long-term maintenance.
- d. ☐ If the proposed operation and maintenance entity is not a property owner's association, provide proof of the existence of an entity or the future acceptance of the system by an entity which will operate and maintain the system.

- e. ☐ Provide drafts of all proposed conservation easements, stormwater management system easements, draft property owner's association documents, and survey plats for the property containing the proposed system. For onsite and/or offsite applicant-responsible mitigation proposed for preservation (as defined in Volume I), submit draft conservation easement documents or other forms of restrictive covenants, as required by Section C of the application.

- f. ☐ Provide legal reservations for access to the treatment system for maintenance and operation by future maintenance entities for subdivided projects.

- g. ☐ Provide a description or letters from utility providers documenting how potable water and wastewater service will be supplied.

- h. ☐ Provide a copy of the boundary survey and/or legal description and acreage of the total land area within the permit boundary, including all areas with proposed works or activities, and any mitigation areas.

Part 6: Water Use

- a. ☐ Identify if any part of the stormwater management system will be used as a water supply source, e.g. for irrigation or recreation.

- b. ☐ If a Consumptive Use or Water Use permit has been issued for the project, provide the permit number:
- c. ☐ If a Consumptive Use or Water Use permit has not been issued for the project, indicate if such a permit will be required and when the application will be submitted
- d. ☐ Indicate how any existing water use wells (private or public) located within the project site will be utilized or properly abandoned.

Part 7: Special Basin Information

- a. Is the proposed project located within a Special Basin identified in the applicable Applicant's Handbook, Volume II?
- ☐ yes ☐ no ☐ don't know
- b. If yes, please demonstrate that the project will meet the applicable Special Basin criteria.