

I. General Information

- Common address and legal description of site.
- Vicinity map.

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II. Existing Conditions Hydrologic Analysis

- Topographic map of existing site conditions with the drainage basin boundaries indicated.
- Acreage.
- Soil types and land cover of areas for each sub-basin affected by the project.
- All perennial and intermittent streams and other surface water features.
- All existing stormwater conveyances and structural control facilities.
- Direction of flow and exits from the site.
- Analysis of runoff provided by off-site areas upstream of the project site.
- Methodologies, assumptions, site parameters and supporting design calculations used in analyzing the existing conditions site hydrology.

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III. Post-Development Hydrologic Analysis

- Topographic map of developed site conditions with the post-development drainage basin boundaries indicated.
- Total area of post-development impervious surfaces and other land cover areas for each sub-basin affected by the project.
- Calculations for determining the runoff volumes that need to be addressed for each sub-basin for the development project to meet the post-development stormwater management performance criteria in Section 804.
- Location and boundaries of proposed natural feature protection and conservation areas.
- Documentation and calculations for any applicable site design credits that are being utilized.
- Methodologies, assumptions, site parameters and supporting design calculations used in analyzing the existing conditions site hydrology.

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IV. Stormwater Management System

- A map and/or drawing or sketch of the stormwater management facilities, including the location of nonstructural site design features and the placement of existing and proposed structural stormwater controls, including design water surface elevations, storage volumes available from zero to maximum head, location of inlet and outlets, location of bypass and discharge systems, and all orifice/restrictor sizes.
- A narrative describing how the selected structural stormwater controls will be appropriate and effective.
- Cross-section and profile drawings and design details for each of the structural stormwater controls in the system, including supporting calculations to show that the facility is designed according to the applicable design criteria.
- A hydrologic and hydraulic analysis of the stormwater management system for all applicable design storms (including stage-storage or outlet rating curves, and inflow and outflow hydrographs).
- Documentation and supporting calculations to show that the stormwater management system adequately meets the post-development stormwater management performance criteria in Section 804.
- Drawings, design calculations, elevations and hydraulic grade lines for all existing and proposed stormwater conveyance elements including stormwater drains, pipes, culverts, catch basins, channels, swales and areas of overland flow.
- Where applicable, a narrative describing how the stormwater management system corresponds with any watershed protection plans and/or local greenspace protection plan.

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V. Post-Development Downstream Analysis

- A downstream peak flow analysis which includes the assumptions, results and supporting calculations to show safe passage of post-development design flows downstream.
- The analysis of downstream conditions in the report shall address each and every point or area along the project site's boundaries at which runoff will exit the property.
- The analysis shall focus on the portion of the drainage channel or watercourse immediately downstream from the project.

- This area shall extend downstream from the project to a point in the drainage basin where the project area is 10 percent of the total basin area.
- The analysis shall be in accordance with the stormwater design manual.

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VI. Erosion and Sedimentation Plan

- An erosion and sedimentation control plan in accordance with the City of Emerson Erosion and Sedimentation Ordinance or NPDES Permit for Construction Activities.
- The plan shall also include information on the sequence/phasing of construction and temporary stabilization measures and temporary structures that will be converted into permanent stormwater controls.

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VII. Landscaping and Open Space Plan

- A detailed landscaping and vegetation plan prepared in accordance with the City of Emerson Tree Preservation and/or Landscape Ordinance.

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VIII. Operations and Maintenance Plan

- Identify the parts or components of a stormwater management facility or practice that need to be regularly or periodically inspected and maintained, and the equipment and skills or training necessary.
- Include an inspection and maintenance schedule, maintenance tasks, responsible parties for maintenance, funding, access and safety issues.
- Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan.

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IX. Maintenance Access Easements

- The applicant must ensure access from public right-of-way to stormwater management facilities and practices requiring regular maintenance at the site for the purpose of inspection and repair by securing all the maintenance access easements needed on a permanent basis. Such access shall be sufficient for all necessary equipment for maintenance activities. Upon final inspection and approval, a plat or document indicating that such easements exist shall be recorded and shall remain in effect even with the transfer of title of the property.

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X. Inspection and Maintenance Agreements

- Unless an on-site stormwater management facility or practice is dedicated to and accepted by the City of Emerson, the applicant must execute an easement and an inspection and maintenance agreement binding on all subsequent owners of land served by an on-site stormwater management facility or practice.

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XI. Evidence of Other Applicable Permits

- The applicant shall certify and provide documentation to the City of Emerson that all other applicable environmental permits have been acquired for the site prior to approval of the stormwater management plan.

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