

# Development Services

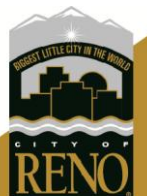
## Preliminary Hydrology/Drainage Plan Submittal Guide

### What is a Preliminary Hydrology/Drainage Plan?

This technical engineering report is prepared by a NV Registered Professional Civil Engineer, whose purpose is to identify and define hydrology and drainage characteristics associated with a proposed development and to define possible problems and conceptual solutions. In its final form, the report transforms the defined conceptual solutions to a final hydrology/drainage plan.

### Checklist

- Title page with project name, firm, and engineer's signature, date, and seal.
- Description of project location, including vicinity map, site plan, adjacent roadways, adjacent developments, etc.
- Area of project, description of existing land use, proposed development, project phasing, topography, ground cover, major drainageways, storm water management facilities, etc.
- Description and relevance of previous drainage studies pertinent to the development or prepared for the subject site.
- Exhibit(s) and description(s) of the project site and its relationship to nearby or on-site FEMA Flood Hazard Zones.
- Exhibit(s) and description(s) of the off-site and on-site watershed and storm water facilities impacting the project and/or adjacent to the project boundaries for the pre-development and post development site conditions.
- Hydrologic parameters, assumptions, and methodologies utilized in the 5-year and 100-year rainfall and runoff calculations for off-site and on-site drainage subbasins. Parameters and calculations shall distinguish between predevelopment and post-development site conditions with all sources referenced.
- Hydraulic parameters, assumptions, and methodologies utilized in the 5-year and 100-year peak runoff flow calculations for existing and proposed storm water facilities in the predevelopment and post-development site conditions. Storm water facilities to include: swales and open channels, catch basin inlets, storm drains, streets, culverts, detention basins, irrigation ditches, ponds, wetlands, and any special appurtenances (retention basins, infiltration systems, sump pumps, etc.) All calculations and design flow limitation to be in accordance with the Public Works Design Manual and the Truckee Meadows Regional Drainage Manual as applicable.
- Indicate the ownership and maintenance of all existing and proposed storm water management facilities (i.e., private, public, City of Reno, Sparks, or Washoe County). Describe the entity(s) proposed to provide private storm water facility maintenance.
- Demonstrate the adequacy of the proposed storm water management facilities to collect and convey off-site tributary and project generated peak storm water flows in accordance to the performance criteria defined in the Public Works Design Manual and the Truckee Meadows Regional Drainage Manual as applicable. Provide preliminary calculations and designs, including sizes, materials, and slopes, for all culverts, storm drains, and drainage channels/swales.
- Determination of the adequacy of the existing downstream storm water system(s) to accommodate the peak flows from the developed site and the need for on-site storm water detention and/or retention.
- Preliminary detention and/or retention basins calculations and sizing parameters, including: storage volumes, inlet and outlet performance information, maximum water surface elevations, and emergency overflow provisions.
- Provide an exhibit and description of all storm water facilities (public or private) proposed to be abandoned, including the method of abandonment.
- Provide information regarding the ownership and maintenance of irrigation facility (ditches) traversing or abutting the subject site. If the development plans to modify or discharge storm waters into this facility, provide approval documentation from the owner of the irrigation facility.
- Provide information regarding the site's inclusion within a Truckee River Critical Flood Pool Zone, if applicable. Describe the development plan for mitigating the project's impact on this flood pool zone in accordance with city code.



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- Provide information regarding the soil conditions (percolation testing, etc.), design volumes, redundant volumes, maintenance access, observation ports, and emergency overflow provisions for the proposed storm water retention or infiltration basin, if applicable.
- Provide information regarding the discharge of on-site storm waters into the adjacent natural water body and the proposed mitigations to meet city code requirements for minimum water quality standards.
- Provide information regarding any proposed FEMA Flood Hazard Zone map revision or amendment applications intended to support this project, if applicable.
- Provide a discussion on the impact of potential shallow groundwater (at least 5 feet between bottom of basin and water table) on site improvements and underground facilities and proposed mitigations, if applicable.

## Submittal Guidelines

All plan sheets shall be provided in the PDF format in a 24" x 36" page size scaled at 1 inch = 60 feet unless otherwise indicated in the application checklist. All sheets provided in full-size should also be provided in an 8.5" x 11" page size.

