

# EXHIBIT 8-1

## DRAINAGE REPORT CHECKLIST

**NOTE:** This document is intended as an aid in preparing Drainage Reports located in southern Sandoval County. This checklist was developed by the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA). This document is not intended to be all inclusive, and does not limit the extent of the information, calculations, and exhibits that may be necessary to properly evaluate the intended land use. **This checklist must be included with all drainage report submittals.**

### General Information:

Date: \_\_\_\_\_ File Name or No. \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Proposed Land Use: \_\_\_\_\_ Zoned: \_\_\_\_\_  
Location: \_\_\_\_\_ Acreage: \_\_\_\_\_ No. of Lots: \_\_\_\_\_  
Legal Description: \_\_\_\_\_  
FIRM Community Panel No: \_\_\_\_\_ SFHA:  Yes  No  
Engineering Firm: \_\_\_\_\_  
Project Manager: \_\_\_\_\_  
Telephone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
Address: \_\_\_\_\_  
Email: \_\_\_\_\_

### Drainage Report Contents General Format

The following items must be included in order to initiate review:

1. Project Name and Legal Description
2. Engineer's Seal, Signature and Date
3. Typed, Bound, Legible Report
4. Pertinent portions of all referenced information/reports
5. Drainage Report Checklist

Engineer's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(seal)

### Introduction

Description	Yes (included)	Not Applicable	Reviewer's Notes
Type of approval sought (i.e. zone change, subdivision plat, vacation, site plan, paving or grading permit, variance)			
Complete summary of study intent, resultant Drainage Management Plan for the site. Describe how all off- and on-site flows are dealt with and how they leave the site, with respect to downstream capacity, historic and/or existing and full development condition flows.			
Location and Project Description			
Vicinity Map			
Copy of Preliminary or Final Plat			
Phasing Description			
Discussion of jurisdictions affected			
Watershed Name			
Site investigation Summary (describe if any grading has occurred since topography shown on plan, existing off- and on-site drainage facilities, etc.)			
References and Drainage / Planning History			
Description	Yes (included)	Not Applicable	Reviewer's Notes
Floodplain Information & Map (show property location on copy of effective FEMA Flood Insurance Rate Map (FIRM))			
References - Planning History, Zoning			
SSCAFCA/Master Planning Info. (facility design over 500 cfs or adjacent to SSCAFCA facility will require SSCAFCA approval)			
Drainage Basin Description			
Description	Yes (included)	Not Applicable	Reviewer's Notes
Off-site Flow Description & Map (with topo, flow patterns, and Q100)			
Existing Site Condition and Drainage Facilities Description			
Soils, Geology, Land Treatments			
Existing and proposed zoning and land use			
On-site Flow Description & Map (with topo, flow patterns, Q100 pre and post development, V100 pre and post development at analysis points)			
Hydrology			
Description	Yes (included)	Not Applicable	Reviewer's Notes
Discussion of Hydrologic Model / Methodology (must use current version of AHYMO or equivalent hydrologic modeling program i.e. HEC-HMS)			
Modeling Schematic			
Rainfall Distribution 2-yr. / ___ hr. or ___ day 10-yr. / ___ hr. or ___ day (req'd for street design) 100-yr. / ___ hr. or ___ day			
Land Treatment allocations (%) Pre-development / post-development			
Time to Peak Calculations			
Emergency Spillway Design			
Spillway Flood Return Period ___-yr./ ___ hr. or ___ day			

Channel Routing (must use Muskingum-Cunge procedure)			
Reservoir Routing			
<b>Hydrology Cont.</b>			
<b>Description</b>	<b>Yes (included)</b>	<b>Not Applicable</b>	<b>Reviewer's Notes</b>
Elevation-Area-Volume-Discharge data and calculations			
Detention Pond Flood Routing Summary Table A*			
Hydrologic Summary Table B (main analysis points)*			
Sediment Yield/Sediment Transport (aggradation/degradation analysis)			
Input File (paper & digital)			
Output File (paper & digital)			
Existing and Proposed Development Site Plan			
State Engineer's Office Approval (dams in excess of 50 acre feet of storage or 25' of embankment height)			
<i>*Blank Summary Tables are attached to this checklist for inclusion in the consultant's report</i>			
<b>Hydraulics</b>			
<b>Description</b>	<b>Yes (included)</b>	<b>Not Applicable</b>	<b>Reviewer's Notes</b>
Discussion of Hydraulic Model(s) and Methodology			
Parameters for Model(s) / Methodology			
Storm Sewer Hydraulics and Storm Inlet Capacity Calculations (must be submitted)			
Street Capacity Calculations (10-year and 100-year)			
Arroyo, Channel, Culvert, Bridge Capacity Calculations			
Arroyo / Channel stability addressed			
Scour Calculations			
Superelevation Calculations			
Floodplain/Floodway Discussion & Calculations			
Freeboard and levee criteria addressed			
Comparison of historic/existing/fully developed condition peak discharge rates and runoff volumes with respect to existing and proposed drainage infrastructure capacities.			
Verification and discussion of downstream capacity			
<b>Miscellaneous</b>			
<b>Description</b>	<b>Yes (included)</b>	<b>Not Applicable</b>	<b>Reviewer's Notes</b>
Pertinent portions of all referenced information			
Soils investigation			
Structural calculations for retaining walls in excess of 3' in height, sealed by Structural Engineer			
Letter for permission to grade on adjacent parcels from parcel's owner			
Operations / Maintenance requirements ownership/easements and ROW			
All weather access addressed			
<b>Conclusions</b>			
Compliance with local criteria			
Compliance with SSCAFCA criteria			
Compliance with City of Rio Rancho DPM (Sections 22.2 through 22.8) and SSCAFCA criteria			