EDINBURGH
Drainage Implementation Plan

(26th Street in Unit 13)
Within the Montoyas Arroyo Watershed

Prepared for:
Southern Sandoval County Arroyo
Flood Control Authority

Prepared By:
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September 2008
EDINBURGH DRAINAGE IMPLEMENTATION PLAN
SOUTHERN SANDOVAL COUNTY ARROYO FLOOD CONTROL AUTHORITY

APPROVALS

Melon Ridge Subdivision
Owner
Date 10/3/08

Socito Subdivision
Owner
Date 10/5/08

Milagro Mesa Subdivision
Owner
Date 10/8/08

Park Parcel
Owner
Date 9/16/08

Tierra Del Oro Subdivision
Owner
Date 10/7/08

Stonegate Subdivision
Owner
Date 10/7/08

I, Jarrod D. Likar being first duly sworn, upon my oath state that I am a registered professional engineer, qualified in Civil engineering, and that the accompanying report was prepared by me or under my supervision and is true and correct to the best of my knowledge and belief.

Registered Professional Engineer

10/9/08
EDINBURGH DRAINAGE IMPLEMENTATION PLAN
SOUTHERN SANDOVAL COUNTY ARROYO FLOOD CONTROL AUTHORITY

APPROVALS

SSCAFCA

David Stoliker, PE
Executive Director

City of Rio Rancho

Randall J. Carroll

10-9-08
Date

10-3-08
Date

This is a planning document. Nothing herein constitutes any commitment by SSCAFCA and/or the City of Rio Rancho to construct any project, study any area, acquire any right of way or enter into any contract. This facility plan does not obligate SSCAFCA and/or the City of Rio Rancho in any way. This facility plan will be used in the review of developments within the area as they work through the entitlement process in the City of Rio Rancho.

Drainage facility alignments, conveyance treatments, corridors, locations, rights-of-way and cost estimates are conceptual only, and may be altered or revised based upon future project analysis, changed circumstances or otherwise.

Land uses included in this document were assumed for the basis of hydrologic modeling only. This document does not grant "free discharge" from any proposed development except as noted herein.

Naturalistic channel treatments and piped storm drains are to be used for conveyance stabilization, unless otherwise authorized by SSCAFCA and/or the City of Rio Rancho.
# EDINBURGH DRAINAGE IMPLEMENTATION PLAN

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SECTION 1 - PURPOSE

The purpose of this report is to establish the implementation plan necessary to convey the storm water runoff from Basin M20.104 (Edinburgh Basin) of the Montoyas Arroyo Watershed Management Plan (MAWMP) to the Montoyas Arroyo. This Edinburgh Drainage Implementation Plan identifies specific components of the drainage improvements necessary to convey the runoff from the undeveloped basins as well as the basins proposed for development. The Edinburgh Drainage Implementation Plan establishes the required infrastructure for each area of development within Edinburgh Basin. As each area within the basin develops interior drainage systems will need to be designed that will tie into the main system contained in this implementation plan. Additionally, each area will be required to adhere to the established discharge rates contained within the Edinburgh Facility Plan.

The approved Edinburgh Facility Plan is incorporated into this Drainage Implementation Plan by reference. The Drainage Implementation Plan is intended to define the overall policy for construction and implementation of drainage improvements, while the approved Edinburgh Facility Plan provides the design requirements for those improvements. Should technical design requirements in the approved Edinburgh Facility Plan conflict with information in this Drainage Implementation Plan, the approved Facility Plan will prevail.
SECTION 2 – EXECUTIVE SUMMARY

The Edinburgh Facility Plan basin consists of approximately 650 acres within Unit 13 of the City of Rio Rancho. Please see Exhibit 1 for visual locations. The area is governed by several master plans that establish a variety of zones including commercial, office and residential.

The project area is bounded by several unique features and boundaries. The western edge of the subject area is bounded by the Fruta Road right-of-way which is adjacent to the Montoyas Arroyo north of Northern Boulevard. The Montoyas Arroyo is the eventual discharge point for the storm water runoff from this watershed. The southern end of the basin is bounded by Northern Boulevard, a future four lane major arterial for the City of Rio Rancho with a current 100 foot right-of-way corridor. A small portion of the eastern boundary of the basin crosses 30th Street. For the most part, 30th Street (a major north/south arterial connecting City Center to Northern Boulevard) creates the eastern boundary of the plan. 15th Avenue forms the northern boundary of the Facility Plan, with a small tributary extending north of 19th Avenue along Edinburgh Drive to 23rd Avenue.

The proposed development within the Edinburgh Basin includes commercial, and mixed residential uses. The proposed drainage system reflects the increased runoff associated with the development of the project. All developments in the Edinburgh Facility Plan with the exception of Regal Subdivision at Stonegate and Milagro Mesa Subdivision, have been designed for free discharge into the main drainage system then into the Montoyas Arroyo.

The proposed drainage system is designed to accommodate fully developed flows from each individual tract. No onsite detention ponds will be required within the individual tracts. A regional pond located in Stonegate Subdivision will reduce the flow from the lots north of 13th Avenue so that the developments south of 13th Avenue can free discharge and the entire basin will release flow rates under historic conditions. The main truck line of the Edinburgh storm drain system will tie directly into the Northern Boulevard system flowing into the box culvert crossing at the Montoyas Arroyo.
SECTION 3 – QUALIFICATIONS & DISCLAIMERS

1) The calculation and designs in the Edinburgh Facility Plan are presented as having adequate detail for Facility Plan requirements. This detail ensures that the overall drainage system, including storm drain pipe size, and detention pond size are adequate to safely convey the 100-yr event.

2) The drainage system designs are presented with minimum required slopes in the Edinburgh Facility Plan. Final hydraulic design calculations must be provided for all storm drain lines at the time of final engineering design.

3) Basins were analyzed in both pre-developed and fully developed condition. The fully developed condition for existing platted lots were assumed to be developed as existing platting and not re-developed conditions (1/2 Acre & 1 Acre lots). If re-development occurs in the existing platted lots the development will be required to pond the difference in storm water run-off from Developed Existing and Redeveloped conditions.

4) If any conflict arises between this Drainage Implementation Plan and the Edinburgh Facility Plan the Facility Plan shall govern. Hydraulic information provided in the Edinburgh Facility Plan (release rates) is of sufficient accuracy for design of internal tracts. The release rates stated in this report are “permissible” release rates.

5) All costs of construction depicted within this Drainage Implementation Plan reflect unit prices at the time of the plan. All percentages (XX%) depicted adjacent to costs reflect the contribution of construction costs that will be made by the specific entity relative to unit prices at the time of construction.

6) All costs associated with the construction of Regional Pond #1 are not included in the costs located within this report. External agreements between developments within the basin will be required to construct the multi-use facility and allocate potential park impact fee credits from the City of Rio Rancho.

7) Any mention within this report regarding reimbursement for improvements through drainage impact fees must be accompanied by an agreement between participating developers within the area and the City of Rio Rancho.

Summarize:
- Platted lots will use developed existing land treatments per MAWMP
- Specific redeveloped areas free discharge
- Single discharge point to the proposed pipeline in Northern Boulevard
- Regional Pond #1 is expanded and creates a multi-use facility (7 Acres Minimum)
SECTION 4 – SPECIAL CONDITIONS

Developments within the basin will construct improvements at various times and locations within the basin. To facilitate development within any part of the basin, temporary retention ponds will be allowed until the major backbone storm drain system downstream of the development is in place. The retention ponds will be maintained by the individual development that the retention pond serves until such time as the backbone storm drain infrastructure described in this report is accepted for operation and maintenance by SSCAFCA and the City of Rio Rancho. Any retention ponds will need to be included within individual development drainage reports for each subdivision and approved by SSCAFCA and the CoRR prior to construction.
SECTION 5 – INFRASTRUCTURE REQUIREMENTS BY TRACT

Melon Ridge Subdivision
The following scenario will consider the infrastructure necessary to service Melon Ridge Subdivision individually or in conjunction with additional developments south of 13th Avenue. (See Exhibit 2).

- If Melon Ridge was to be constructed by itself with no other developments existing in the Basin, Melon Ridge will be required to build the blue shaded section of the designed storm drain and tie into the Northern Boulevard drainage system provided the City of Rio Rancho has completed their portion of improvements. The estimated cost of these improvements will be $508,018 (28%). Melon Ridge Subdivision’s required contribution is $271,850 (15%) therefore $236,168 (13%) will be reimbursed to Melon Ridge through an independent agreement between developing parties or through drainage impact fees collected by the City of Rio Rancho.

- If the storm drain line within the Northern Boulevard right-of-way has not been constructed in conjunction with the City of Rio Rancho widening project, a temporary retention pond must be constructed onsite to handle internal storm water runoff (see Exhibit 2). The existing playa north of 13th Avenue will act as a temporary retention facility releasing storm flows at historic rates for the northern half of the Edinburgh Basin. The City of Rio Rancho will accept responsibility for operation and maintenance of the playa until such time as Regional Pond #1 is constructed (see Exhibit 1).

Solcito Subdivision
The following scenario will consider the infrastructure necessary to service Solcito Subdivision individually or in conjunction with additional developments south of 13th Avenue. (See Exhibit 3).

- If Solcito was to be constructed by itself with no other developments existing in the Basin, Solcito will be required to build the blue shaded section of the designed storm drain and tie into the Northern Boulevard drainage system provided the City of Rio Rancho has completed their portion of improvements. The estimated cost of these improvements will be $508,018 (28%). Solcito Subdivision’s required contribution is $293,830 (16%) therefore $214,188 (12%) will be reimbursed to Solcito through an independent agreement between developing parties or through drainage impact fees collected by the City of Rio Rancho.

- If the storm drain line within the Northern Boulevard right-of-way has not been constructed in conjunction with the City of Rio Rancho widening project, a temporary retention pond must be constructed onsite to handle internal storm water runoff (See Exhibit 3). The existing playa north of 13th Avenue will act as
a temporary retention facility releasing storm flows at historic rates for the northern half of the Edinburgh Basin. The City of Rio Rancho will accept responsibility for operation and maintenance of the playa until such time as Regional Pond #1 is constructed (see Exhibit 1).

**Milagro Mesa Subdivision**

The following scenario will consider the infrastructure necessary to service Milagro Mesa Subdivision individually or in conjunction with additional developments south of 13th Avenue. (See Exhibit 4).

- Milagro Mesa will be allowed to discharge flows described within the Edinburgh Facility Plan to adjacent rights-of-way with no additional downstream improvements. Milagro Mesa will be required to contribute $42,986 (2%) to the Edinburgh drainage system improvements. This contribution will be divided per an independent agreement among the developing parties that will construct the backbone storm drain line within Edinburgh Drive.

**Park Parcel**

The following scenario will consider the infrastructure necessary to service the Park Parcel individually or in conjunction with additional developments south of 13th Avenue. (See Exhibit 5).

- If the Park Parcel was to be constructed by itself with no other developments existing in the Basin, the Park Parcel will be required to construct a temporary onsite retention pond and will be required to build the blue shaded section of the designed storm drain. The estimated cost of these improvements will be $235,173 (13%). The Park Parcel’s required contribution is $139,191 (8%) therefore $95,982 (5%) will be reimbursed to the Park Parcel through an independent agreement between developing parties or through drainage impact fees collected by the City of Rio Rancho.

- The existing playa north of 13th Avenue will act as a temporary retention facility releasing storm flows at historic rates for the northern half of the Edinburgh Basin. The City of Rio Rancho will accept responsibility for operation and maintenance of the playa until such time as Regional Pond #1 is constructed (see Exhibit 1).

- If the Park Parcel was to be constructed after the completion of the designed storm drain, the Park Parcel would be required to repay the party responsible for construction of the Park Parcel’s portion of designed storm drain. The required contribution is $139,191 (8%).

**Tierra Del Oro Subdivision**

The following scenarios will consider the infrastructure necessary to service Tierra Del Oro Subdivision individually or in conjunction with additional developments north of 13th Avenue. (See Exhibit 6).
• If Tierra Del Oro was to be constructed by itself with no other developments existing in the Basin, Tierra Del Oro will be required to build the blue shaded section of designed storm drain that flows directly to Regional Pond #1 (see Exhibit 6). The cost of these improvements will be $697,266 (39%). Tierra Del Oro Subdivision’s required contribution is $591,989 (33%) therefore $105,277 (6%) will be reimbursed to Tierra Del Oro through an independent agreement between developing parties or through drainage impact fees collected by the City of Rio Rancho.

• A temporary retention pond will be constructed in the footprint of Regional Pond #1 and maintained by the developer until permanent improvements for Regional Pond #1 are completed.

• If Stonegate was to be constructed first or prior to the construction of Tierra Del Oro, Tierra Del Oro Subdivision will be required to build the green shaded section of the designed storm drain. (See Exhibit 6). The cost of these improvements will be $506,920 (28%). Tierra Del Oro Subdivision’s required contribution is $591,989 (33%) therefore $85,069 (5%) will be the balance needed to be contributed to the system by Tierra Del Oro through an independent agreement between developing parties.

• If Tierra Del Oro (Phase 5) was to be constructed before the construction of the Park Parcel, Tierra Del Oro (Phase 5) would need to construct their portion along with the Park Parcels portion of the designed storm drain. The Park Parcel would then reimburse Tierra Del Oro once the Park Parcel is constructed. The cost of these improvements would be $139,191 (8%) (see Exhibit 5).

**Stonegate Subdivision**

The following scenarios will consider the infrastructure necessary to service Stonegate Subdivision individually or in conjunction with additional developments north of 13th Avenue. (See Exhibit 7).

• If Stonegate was to be constructed by itself with no other developments existing in the Basin, Stonegate will be required to build the blue shaded section of the designed storm drain that flows directly to Regional Pond #1 (see Exhibit 7). Regional Pond #1 will also be constructed at the time of storm drain construction. The cost of these improvements will be $559,636 (31%). Stonegate Subdivision’s required contribution is $470,800 (26%) therefore $88,836 (5%) will be reimbursed to Stonegate through an independent agreement between developing parties or through drainage impact fees collected by the City of Rio Rancho.

• If Tierra Del Oro was to be constructed first or prior to the construction of Stonegate, Stonegate Subdivision will be required to build the green shaded section of the designed storm drain and tie into the storm drain system
previously constructed by Tierra Del Oro Subdivision (see Exhibit 8). The cost of these improvements will be $369,290 (20%). Stonegate Subdivision’s required contribution is $470,800 (26%) therefore $101,510 (6%) will be the balance needed to be contributed to the system by Stonegate through an independent agreement between developing parties.

- If Stonegate (Phase 3) was to be constructed before the construction of the Park Parcel, Stonegate (Phase 3) would need to construct their portion along with the Park Parcels portion of the designed storm drain. The Park Parcel would then reimburse Stonegate once the Park Parcel is constructed. The cost of these improvements would be $139,191 (8%) (see Exhibit 5).

**City of Rio Rancho**

The City of Rio Rancho will construct the connection from Edinburgh Drive to the Box Culvert at the Montoyas Arroyo. The construction of the pipeline within Northern Boulevard (see Exhibit 8) is contingent upon funding for the Northern Boulevard Expansion Project currently under design by the City of Rio Rancho.