Drainage Impact Fee AB 1600 Nexus Study
Update to the Thermalito Master Drainage Plan

Prepared for

The City of Oroville
and
Butte County

Prepared by

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I. INTRODUCTION

This Nexus Study presents the maximum development impact fees related to the Update of the Thermalito Master Drainage Plan, dated May 2007 and revised in November 2009, prepared by RBF Consulting ("Drainage Plan Update"). This Nexus Study has been prepared by Keyser Marston Associates, Inc. which, along with RBF, contracted with the City of Oroville and Butte County to update the fees imposed on new development for its share of drainage infrastructure.

The enactment of AB 1600 (Government Code §66000 et. seq.) and related case law produced formal requirements for documenting the basis for valid development impact fees in California. The goal of this Nexus Study is to calculate impact fees in accordance with AB 1600, which will provide the funds required to construct various improvements attributable to new development. As per AB 1600, development impact fees cannot address existing capital deficiencies.

The Drainage Plan Update incorporates Capital Improvement Plans (CIPs) for drainage infrastructure. The adoption of the CIPs, the establishment of accounts, and the appropriation of funds for the improvements in the CIPs are all required for collecting the development impact fees.

Consistent with AB 1600, the process for calculating the development impact fees can be broken down into the following basic tasks:

1. Facilities Requirements: The Drainage Plan Update identified numerous drainage improvements to both correct existing drainage deficiencies and to accommodate drainage needs caused by new development.

2. Funding Sources: Following the identification of facilities requirements, available fund balances are accounted for and commitments from other sources of funds are evaluated. The result of this analysis is a dollar amount that can be funded by new development through impact fees.

3. Allocation of Responsibility to Pay: The fees on new development are calculated based on the mitigation required to offset the relative drainage impacts caused by each of the land uses. New development will pay only its fair share portion of the overall costs.

The original Thermalito Area Master Drainage Plans were completed in two parts. The plan for the unincorporated portions of Butte County was completed in February 1979 and amended in June 1980. The plan for the City of Oroville portion was completed in February 1980. Development impact fees were separately adopted by the City and County at that time to fund recommended drainage improvements and have continued to be collected to this day.

The Drainage Plan Update compiled drainage information for the entire 3,579 acres that make up the Thermalito Area into a single document. While the subject land area lies partly in the City of

Oroville and partly in the County, the City and County have decided to prepare a single drainage plan and a single fee structure for all areas and all drainage basins of Thermalito.

II. CURRENT DRAINAGE FEES

At the current time the City and County charge drainage impact fees in the Thermalito area as shown in Table 1 and Table 2, respectively:

Table 1
City of Oroville
Existing Thermalito Fees

Land Use	Fee Per Acre
Single Family Residential	$3,641
Multiple Family Residential	$4,523
Commercial/Industrial	$5,287

Table 2
Butte County
Existing Thermalito Fees

Land Use	Fee
Residential development on existing parcels or lots	
▪ Existing lot for which full drainage fees have not been paid	$684 per new living unit for any building permit
▪ Temporary living units	$136 prior to building permit plus $136 per year for the first four renewals; not to exceed $684
Parcel maps for single-family residential development	
▪ First division subject to fee payment	$1,228 per acre
▪ Further division	$684 per parcel
▪ New building permit on each of the resulting parcels	$684 per unit

All Other Uses	Class A	Class B	Class C	Class D
	Subdivision within a single-family residential land use with an assumed density of 4 units per acre	Multi family residential, medium density	Commercial, office buildings and shops, mobile home parks	Existing unimproved land which is anticipated to be developed to some more highly developed use at a future date
Ruddy Creek Basin	$5,380 per acre	$6,877 per acre	$6,504 per acre	$832 per acre
West Basin	$2,556 per acre	$3,268 per acre	$4,489 per acre	$188 per acre
East Basin	$9,028 per acre	$11,541 per acre	$10,152 per acre	$631 per acre
Southeast Basin	$1,827 per acre	$2,335 per acre	$2,704 per acre	$449 per acre
Basin 39	$3,317 per acre	$4,241 per acre	$4,307 per acre	$0

** Total fee for Other Uses to be the sum of Class A or B or C plus Class D multiplied by the acreage of the property.*

III. DRAINAGE FACILITIES AND COST ALLOCATION

The design criteria of the Drainage Plan Update are based on correcting existing deficiencies and accommodating future development in the Thermalito area. At the direction of the City and County, the Drainage Plan Update assumes that parcels larger than one acre will be required, at the owners' expense, to provide on-site detention measures with the intent to limit discharges to current levels. Therefore, the drainage improvements recommended in the Drainage Plan Update are based on runoff impacts caused mostly by parcels that cover one acre or less. The design of the drainage system was based on an assumption that at future "build out" condition, the parcels that cover one acre or less will increase to an overall 60% impervious surface coverage. The City and County have advised that, in combination, the recommended projects in the Drainage Plan Update and the requirement for on-site detention on lots larger than one acre substitute for the projects included in the original 1980 Thermalito drainage plans.

A listing of the improvements and a preliminary cost estimate for each facility is included in the Drainage Plan Update and a summary is included in Table 5 of this report. As shown, the costs include construction costs, Right-of-Way acquisition, engineering and environmental costs, a contingency fund, and City and County costs to administer the implementation and construction of the program. These costs total approximately $7.55 million.

For purposes of the drainage fee calculations, RBF separated the $7.55 million in costs into the portion attributable to (1) development that has already occurred to date (2) future new development parcels larger than one acre, and (3) future new development parcels that cover one acre or less. A portion of the costs are allocated to the future new development parcels larger than one acre, even though on-site mitigation measures will be required on those parcels, due to the uncertainty related to effectiveness and reliability of on-site systems on flows throughout the watershed during the range of storm conditions that may be experienced.

As shown on Table 6 of this report, the cost of improvements attributable to development that has occurred to date (existing deficiencies) is approximately $4.68 million (62%), the cost of improvements attributable to new development parcels larger than one acre is approximately $1.51 million (20%), and the cost of improvements attributable to new development parcels that cover one acre or less is approximately $1.36 million (18%).

IV. OTHER SOURCES OF FUNDS

As noted, the City and County have been collecting drainage impact fees since the original plans in 1980 and have been used over time to build certain drainage improvements. There is a current fund balance of approximately $403,000 from the City fees and approximately $93,000 from the County fees that have been collected to date. Since the drainage improvements contemplated in the Drainage Plan Update are essentially substitutes for the improvements identified in the original Drainage Plans, these fund balances are recognized as an offset to the costs attributable to development that has occurred to date (existing deficiencies).

Drainage improvements and other public infrastructure improvements are sometimes funded through other funding sources including, principally, Community Facilities Districts (CFDs). However, no CFDs have been created in the Thermalito Area and therefore, this source of funds is not available at this time. To the best of our knowledge there are no other assured sources of funds available for future drainage projects. Should revenues from the State or Federal government become available, fees could be adjusted; however as of this time such funds are not readily available.

V. CALCULATION OF THE MAXIMUM DEVELOPMENT IMPACT FEES

The demand for drainage facilities in Thermalito is generated by the land uses that are being developed and by the residents, employees and visitors that are being served. Once the relationship between the facilities to be constructed and the anticipated land uses has been established, the burden of financing is to be distributed to each land use in proportion to its use of, or benefit from, these facilities. RBF Consulting has prepared an impervious area fraction for both residential and non-residential land uses in the Thermalito area. These impervious area fractions reflect the relative potential for producing runoff from each of the applicable land uses. In this study, these impervious area fractions are applied to the updated set of drainage facilities recommended in the Drainage Plan Update to derive the maximum development impact fee for each land use. The City and County desire a per-unit fee for residential uses and a per-acre fee for non-residential uses.

Table 7 contains the calculation of the maximum drainage fee for new development parcels larger than one acre. The fee is calculated by multiplying the projected gross acres of new development for each land use category by the impervious area fraction for the corresponding land use. Information regarding the applicable parcel acreages was based on data provided by RBF.

The $1.51 million in total costs attributable to future new development parcels larger than one acre are then allocated to the various land uses based on a prorated share of the adjusted acreage. For example, parcels designated Commercial/Office/Retail account for approximately 256.5 adjusted acres of the 997.1 total adjusted acres, or approximately 25.7%. The cost of improvements allocated to these parcels is therefore approximately 25.7% of $1.51 million, or approximately $388,700. The allocated cost is then converted to a per-acre and per unit fee. Table 3 summarizes Table 7, and presents the calculated maximum drainage fees for future new development parcels larger than one acre:

Table 3
Maximum Drainage Fee – Larger than One Acre Parcels
Update to the Thermalito Master Drainage Plans

Land Use	Maximum Drainage Fee
Residential Very Low Density	$990 per Unit
Residential Low Density	$162 per Unit
Residential Medium Density	$75 per Unit
Residential High Density	$49 per Unit
Commercial/Office/Retail	$1,257 per Acre

Table 8 contains the calculation of the maximum drainage fees applicable to future new development parcels that cover one acre or less. These fees are calculated in the same way as in Table 7. Table 4 summarizes Table 8, and presents the calculated maximum drainage fees for future new development parcels that cover one acre or less:

Table 4
Maximum Drainage Fee – Parcels that Cover One Acre or Less
Update to the Thermalito Master Drainage Plans

Land Use	Maximum Drainage Fee
Residential Very Low Density	$6,957 per Unit
Residential Low Density	$1,228 per Unit
Residential Medium Density	$378 per Unit
Residential High Density	$246 per Unit
Commercial/Office/Retail	$6,384 per Acre

This updated fee structure could replace the existing fee structure. For purposes of program implementation, the City and County desire to collect a uniform fee for all areas of Thermalito. The fees would be collected prior to issuing a building permit for the structure.

In a situation where a residential parcel larger than one acre is subdivided into parcels smaller than one acre, it will remain the responsibility of the property owner(s) to provide on-site detention facilities to mitigate runoff as part of the subdivision approval. The applicable impact fee for these newly created smaller parcels remains the fee for parcels larger than one acre.

The City and County may consider certain variations to the fees if a specific development proposal imposes a burden on facilities that differs from the relative burden as presented in the tables. The burden of proof would rest with the applicant to demonstrate that the proposed land use imposes and will continue to impose a lower than average burden on facilities. Reductions will not be granted unless the City and County has the ability to charge for additional capacity should the future owner or tenant actually impose a burden on facilities greater than that used as the basis for a fee reduction.

The City and County will have the ability to impose a fee higher than that presented in this report in situations where it can be demonstrated that the land use will impose a burden on

facilities significantly greater than assumed in the Drainage Plan Update. The City and County may accept or require fees of $1,611 per impervious acre where on-site detention is provided and $8,184 per impervious acre where on-site detention is not provided.

VI. MONITORING DEVELOPMENT AND UPDATING THE DRAINAGE PLAN

The fees calculated in this report are subject to revision due to several factors including variations in the cost of construction and variation in the standards that may be applicable in the future to the design of individual drainage improvements. At a minimum, the fees should be updated annually to reflect changes in the Engineering News Record Construction Cost Index and should also reflect any changes in design standards or costs of projects that will have occurred.

Information about changes in the availability of State/Federal grants and loans or other sources of revenue should also be incorporated into updates to the fee program.

VII. CAVEATS AND LIMITATIONS

An analysis of the cash flow related to the drainage fees has not been prepared. As a result, the ability of the fee program to fund the drainage facilities in a timely manner has not been addressed. Other financing arrangements, including debt and developer reimbursement agreements, may be required in order to provide certain improvements in a timely fashion. The interest costs and interest earnings have not been included in any of the fee programs.

As with any analysis of this type, this report makes use of direction, data and information from sources such as the City and County, other public agencies, and engineers. We do not warrant their accuracy. This report should be updated regularly to reflect changes in expectations regarding future land uses, revisions in the cost estimates for infrastructure, and alternative financing resources.

Table 5.
Recommended Drainage Facilities
Update of the Thermalito Master Drainage Plans
Butte County and City of Oroville

Project Set	Construction	ROW	Engineering 25%	Environmental 20%	Contingency 20%	Administration 10%	Total
A	$892,400	$912,200	$223,100	$178,600	$360,900	$180,500	$2,747,700
B	$490,800	$322,300	$122,700	$98,200	$162,600	$81,300	$1,277,900
C	$309,600	$264,300	$77,400	$61,900	$114,700	$57,400	$885,300
D	$100,900	$333,000	$25,400	$20,300	$86,900	$43,400	$609,900
E	$269,300	$191,300	$67,400	$53,800	$92,100	$46,100	$720,000
F	$659,400	$124,000	$165,000	$131,900	$156,700	$78,400	$1,315,400
Total	$2,722,400	$2,147,100	$681,000	$544,700	$973,900	$487,100	$7,556,200

Source: Update to the Thermalito Master Drainage Plans (May 2007; rev. November 2009), prepared by RBF Consulting.

Table 6.
Cost Allocation of Recommended Drainage Facilities
Update of the Thermalito Master Drainage Plans
Butte County and City of Oroville

	Total Cost	Portion Attributable to Development to Date	Portion Attributable to New Development >1-Acre Parcels	Portion Attributable to New Development <1-Acre Parcels
Total Cost & Allocations	$7,556,200	$4,684,900	$1,511,200	$1,360,100
		62.0%	20.0%	18.0%
(Less) Existing Fund Balance - City Portion	($403,300)	($403,300)		
(Less) Existing Fund Balance - County Portion	($93,500)	($93,500)		
Net Cost after Fund Balances	$7,059,400	$4,188,100	$1,511,200	$1,360,100

Source: RBF Consulting

Table 7.
Maximum Drainage Impact Fees
Applicable to New Development >1-Acre Parcels
Update of the Thermalito Master Drainage Plans
Butte County and City of Oroville

Land Use	Projected Gross Acres of New Development >1-Acre Parcels [1]	Total Units [1]	Impervious Fraction [1]	Adjusted Acreage		Allocation of Cost	Maximum Fee
Residential							
Very Low Density	28.7	28	0.60	17.2	1.8%	$27,715	$990 /unit
Low Density	45.5	273	0.60	27.3	2.9%	$43,989	$162 /unit
Medium Density	1,088.8	14,155	0.60	653.3	69.7%	$1,052,678	$75 /unit
High Density	71.3	1,427	0.60	42.8	4.6%	$68,965	$49 /unit
Commercial/Office/Retail [2]	252.9		0.78	197.3	21.0%	$317,853	$1,257 /acre[3]
Total	1,487.2	15,883		937.9	100.0%	$1,511,200	

[1] Source: RBF Consulting

[2] Includes Airport Business Park and Retail/Business Services (a small portion of land for Environmental Conservation/Safety, Public, and Unclassified is also included).

[3] Rate based on impervious fraction of 0.78. Rate may vary for substantially different conditions.

Table 8.
Maximum Drainage Impact Fees
Applicable to New Development ≤1-Acre Parcels
Update of the Thermalito Master Drainage Plans
Butte County and City of Oroville

Land Use	Projected Gross Acres of New Development ≤1-Acre Parcels [1]	Total Units [1]	Impervious Fraction [1]	Adjusted Acreage		Allocation of Cost	Maximum Fee
Residential							
Very Low Density	2.8	2	0.60	1.7	1.0%	$13,912	$6,957 /unit
Low Density	0.5	2	0.60	0.3	0.2%	$2,455	$1,228 /unit
Medium Density	230.2	2,992	0.60	138.1	83.1%	$1,130,157	$378 /unit
High Density	25.2	504	0.60	15.1	9.1%	$123,573	$246 /unit
Commercial/Office/Retail [2]	14.1		0.78	11.0	6.6%	$90,003	$6,384 /acre[3]
Total	272.8	3,500		166.2	100.0%	$1,360,100	

[1] Source: RBF Consulting

[2] Includes Airport Business Park and Retail/Business Services (a small portion of land for Environmental Conservation/Safety, Public, and Unclassified is also included).

[3] Rate based on impervious fraction of 0.78. Rate may vary for substantially different conditions.