Fee Plan

Sacramento County
Water Agency

Engineer's Report
For
Zones 11A, 11B, and 11C

Effective Date: _____2026

Sacramento County Water Agency Code
Zone 11A, 11B, 11C Fee Plan and Engineer's Report

On _____ , 2026 by Resolution Number WA _____, the Board of Directors of the Sacramento County Water Agency, a statutorily created district operating under the authority of and pursuant to the provisions of the Sacramento County Water Agency Act (California Water Code, Appendix, Chapter 66, commencing at Section 66-1 et seq.), adopted the _____, 2026 Fee Plan and Engineer's Report, thereby replacing the previous 2015 Fee Plan and Engineer's Report (established by Resolution Number WA-2898).

[insert Resolution WA-_____, dated _____, 2026]

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2026 DRAINAGE IMPACT FEE PLAN
for ZONES 11A, 11B and 11C
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2026 DRAINAGE IMPACT FEE PLAN
for ZONES 11A, 11B and 11C

Glossary

Fund 315 A, B, & C: The independent fiscal and accounting component with a self-balancing set of accounts. Fund 315 A, B, & C contains the fund balances for the Zone 11 drainage fee program.

Hydrology Standards: Method for calculating precipitation runoff hydrographs used for the planning and design of drainage and flood control systems.

Sacramento County Improvement Standards: Sacramento County Improvement Standards provide the requirements and standards that are to be applied to facilities proposed to be constructed within public rights-of-way within the unincorporated area.

Schedule A: Drainage fees levied by SCWA Title 2 are set forth in Schedule A of the Title. The fee for Zone 11A, 11B, and 11C shall be as listed in Schedule A. On March 1st of each year, or as soon thereafter as possible, the Agency Engineer shall revise the fee rates in accordance with Section 2.50.075 of Title 2.

Schedule D: Credit unit prices listed for Zone 11A creditable facilities. Credit unit prices are set forth in Schedule D of SCWA Title 2. The unit prices are applied to all creditable facilities in Zone 11A, 11B, and 11C. On March 1st of each year, or as soon thereafter as possible, the Agency Engineer shall revise the unit prices in accordance with Section 2.55.060 of Title 2.

SCWA: Sacramento County Water Agency, a statutorily created district operating under the authority of and pursuant to the provisions of the Sacramento County Water Agency Act (West's California Codes, Water Code Appendix, Chapter 66, commencing at Section 66-1, et seq.; Deering's California Codes, Water, Uncodified Acts, Act 6730a).

Trunk Drainage: Drainage facilities that serve a watershed area of thirty (30) acres or greater.

Zone: An area designated within the SCWA boundaries created to finance trunk drainage systems (see Titles 1 and 2 of the SCWA Code). Zone 11 is subdivided into various subzones described in Title 2 of the SCWA Code.

Background

This Fee Plan is drawn pursuant to the Water Agency Code, Title 2, specifically, Sections 2.25.020 and 2.25.040, Content of Fee Plan and Requisite Findings, respectively. The Fee Plan is to be reviewed and adjusted as necessary and periodically, pursuant to Section 2.25.060. This Fee Plan supersedes the 2015 Fee Plan. Where conflict may arise, the Water Agency Code shall take precedence.

The Sacramento County Department of Water Resources (DWR) is herein revising the drainage fee plan for Zones 11A, 11B, and 11C. The purpose of this document is to provide the basic assumptions used in developing the fee and the fee rate structure. This 2026 Fee Plan update does not change the current Zone 11 Schedule A Drainage Fee. However, Zone 11 Schedule D unit credit prices are increased by up to 100%.

Periodic Fee Revision

The assumptions and methods used in calculating the drainage fee are based on the best available information. As future development occurs in each Zone, and master plan improvements are implemented, the fee may be periodically revised based on updated information to keep the fee as current as possible.

Zone 11 History

Zone 11 of the Sacramento County Water Agency was originally formed in April 1965 with the purpose of providing funding for the construction of major drainage facilities. The area within Zone 11 includes the urbanized and urbanizing areas of the unincorporated portions of the County. All development that contributes to storm water runoff (intensity and/or volume) is required to pay a drainage impact fee to offset the cost of trunk and regional drainage facilities necessitated by development.

Computations were made, in the 1965 study, to determine the average cost of constructing drainage facilities. These costs were based on the type of construction prevalent at the time, primarily pipe and trapezoidal concrete-lined open channels. The total cost of such facilities within Zone 11 was estimated, and a per acre cost was determined. The per acre cost varied for different types of development based on average percent of impervious area. Development was broken into three categories: residential, commercial, and parks.

The fee is adjusted annually, based on the Engineering News Record's Construction Cost Index, to account for inflation of construction costs.

In April 1990, a 15% increase in the drainage fee was approved by the Board to allow for the increased drainage facility construction required for environmental mitigation, including additional channel excavation due to wetlands mitigation, and to mitigate some determined cumulative impacts of urban drainage on downstream properties.

The Fee Plan was revised in 1996 to create Zones 11A, 11B, and 11C and to account for the 1996 City/County of Sacramento Hydrology Standards and to add additional drainage components common to development, including:

- Flood control detention (local and regional peak flow)
- Water quality facilities (such as detention)
- Environmental mitigation and monitoring
- Master planning costs, including wetlands delineation
- Limited property acquisition
- Upsizing bridges and large culverts for ultimate capacities

Revisions in this 2015 Fee Plan included an analysis of Zone 11 trunk drainage facilities as described in the drainage master plans for current and recent specific plan areas. A questionnaire was sent out to several developers, engineers, and construction companies to review the unit prices paid for items of work on an expanded Schedule D (Appendix 2). The broad categories, over which the updated Schedule D unit prices were applied, include:

- Closed Conduit (Pipes)
- Channel Excavation
- Basin Excavation
- Basin Real Estate
- Channel Crossings
- Utility Relocation

In September 2014, the Department of Water Resources received responses from developers and engineers commenting on the trunk drainage unit prices on Schedule D. The basis of this 2015 update to the Fee Plan is an adjustment to those unit prices applied to the trunk drainage item list developed for each of the fee zones.

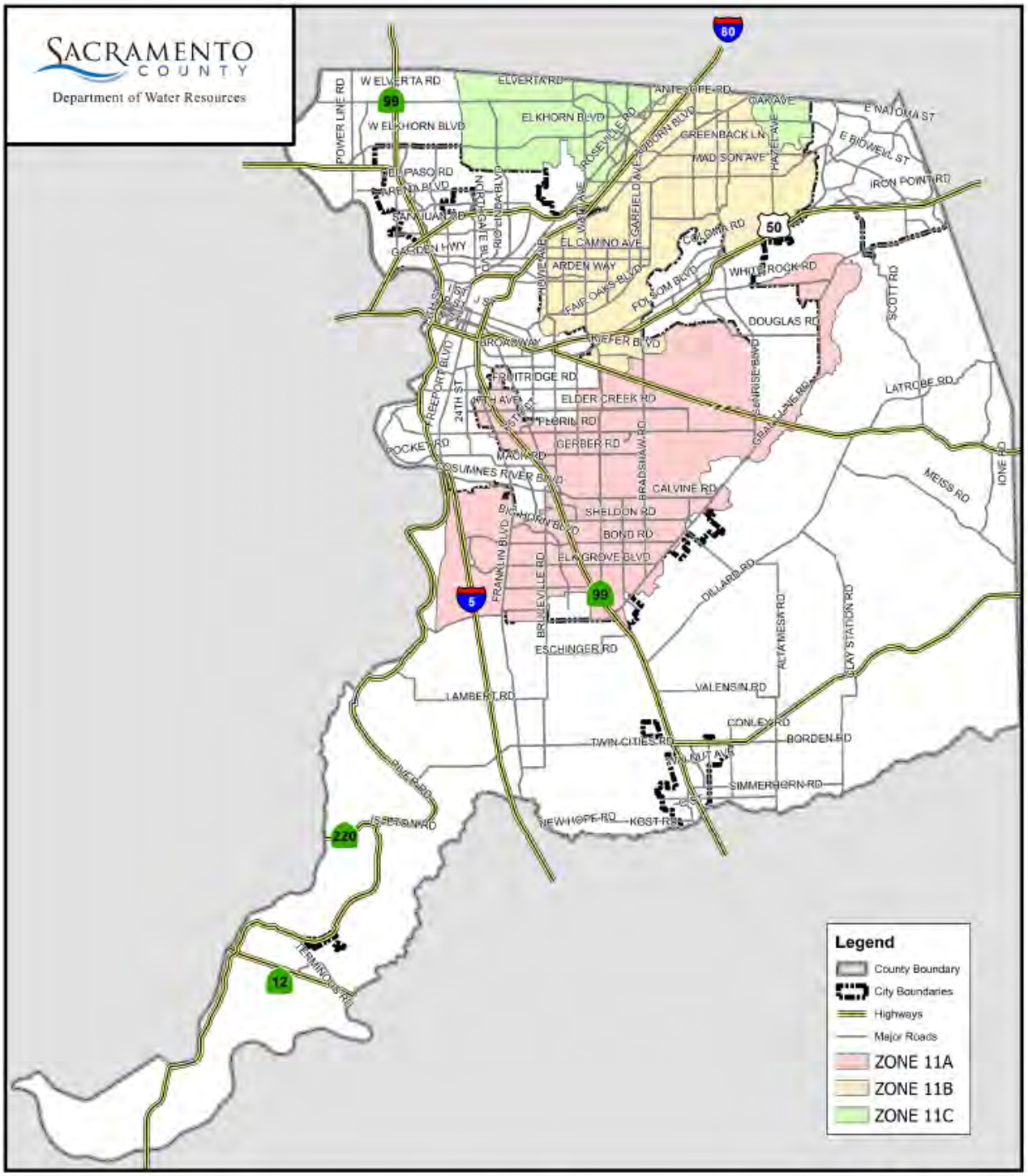
Plan review labor, legal services, consultants and other overhead costs were reviewed and averaged for fiscal years 2004 through 2007, a time when development activity was vibrant.

In 2025, the Department of Water Resources requested and received recommended Schedule D unit prices for trunk drainage items from the California North State Building Industry Association (BIA). The unit prices from the BIA were found to be significantly higher than Schedule D unit prices that were in effect, reflecting the increased cost of construction over the preceding 10 years. To bring unit prices closer to the BIA's proposed unit prices, this 2026 update to the Fee Plan increases the unit prices by 100% or increases the price equal to that provided by the BIA.

Fee Zones

Zones 11A, 11B, and 11C (see map, Figure 1) are intended to account for the variability of facilities required within different major watersheds, due primarily to topography and the existence of natural streams versus man-made channels.

The boundaries of each Zone are based on major watershed boundaries. Within each Zone there is a constant fee, regardless of any specific differences in facility needs of the smaller sub-sheds within that Zone. For example, although some sub-sheds may require flood control detention while other sub-sheds do not, the same fee will be required throughout the Zone and the regional nexus is found in the fact that each development, whether upstream



Zones 11A, B, and C

Figure 1

GIS by: MJ Date: 12-4-2024

or downstream, requires functioning storm drainage systems to facilitate regional road travel and transportation. The Zones 11A, 11B and 11C are described as follows:

1. Zone 11 A - Morrison Creek stream group and watersheds draining to the Beach Stone Lake region.
2. Zone 11 B - American River tributaries and Arden/Arcade watersheds.
3. Zone 11 C - Dry Creek and tributaries and watersheds draining to Steelhead Creek (aka. Natomas East Main Drainage Channel).

Zones 11A, 11B, and 11C are regional and overlap the political boundaries of the Cities of Citrus Heights, and Elk Grove. The fees for each Zone are collected and administered by the Sacramento County Water Agency. Each Zone has a separate budget account, and the funds are not co-mingled.

The fee program for each Zone is a stand-alone program for the purposes of constructing trunk drainage in that Zone in accordance with Title 2. Developing property in each Zone is benefitted by the fee as either the beneficiary of credits for construction of drainage facilities or the user of the trunk drainage facilities within the Zone.

Development Classifications and Component Impacts

There are three basic trunk drainage components: pipes, channels and basins. For purposes of assessing the drainage impact fee, the contribution to the need for each trunk drainage component was considered for a nominal development of various density and corresponding percentage of impervious area. These results were plotted creating a continuum for setting fees for any specific project based on the impervious area of that project.

There will continue to be a different fee for each land use reflecting the way that increased impervious area impacts (per County Hydrology Standards) the drainage facilities. An effort is made to simplify the method for determining site specific impervious area and the fee is set based on the outcome of this calculation. This is of particular importance in the case of parks and schools for which the impervious area may vary widely. It also creates an incentive for a park, school, and commercial projects to reduce drainage impacts to enjoy some relief in the fee charged.

Drainage Fee Calculation

The drainage fee for each Zone is based on the estimated drainage credits that will be given for installation of trunk drainage facilities, plus land acquisition, engineering, administration, and contingency. The fees and credits will not zero balance on a project-by-project basis or a year by year basis, rather, the immense infrastructure required to safely convey storm water, flood water and achieve the goals of the Clean Water Act are estimated over the entirety of each Zone.

Specifically, the fee was determined by:

1. A Compilation was made of estimated trunk drainage facilities, including size and quantity for Zone 11A . The Zone 11A estimate was derived from current drainage master plans and specific plan areas. Zones 11B and 11C were not considered because there is no plan area or large developments planned in Zone 11B, and only one plan area in

Zone 11C that is still in the planning phase.

2. Schedule D unit prices were updated due to info received from the California North State Building Industry Association (BIA) representing area developers, engineers, and contractors. BIA unit prices were markedly higher than current Schedule D unit prices. However, to avoid an increase in fees, unit prices increase are capped at 100% over current unit prices.
3. Land use was determined based on land use plans in the various Zone 11A planning areas. (see Table 2).
4. The impact of each land use, percent impervious area, was determined using the Hydrology Standards, HEC-1 software, and the Improvement Standards.
5. These component costs were summed.
6. Consulting engineering, administration external expenditures, Water Resources Department labor, storm water pollution prevention program and minor drainage review labor, National Pollutant Discharge Elimination Program labor, and other County labor were determined based on historical expenditures and applied to the total.

The effective percent impervious area of a site is primarily related to land use; that is, it is assumed that building on the parcel will complete over time to account for the percentages listed in the table below. Therefore, actual calculations of percent impervious area should only be necessary for land uses not listed in Table 1.

Rainfall can infiltrate, evaporate, transpiration, or run-off. Drainage facilities are designed based on estimation of run-off using computer modeled design storms. The Sacramento County Improvement Standards and the City/County Hydrology Standards provide a method for designing pipes, channels, and detention basins based on effective percent impervious area for various land use. Trunk drainage facilities are required to convey and control runoff from developments that increase percent impervious area, thus, the basis for fees shall be effective percent impervious area.

The following table is adapted from Table 5-3 of the Sacramento City/County Hydrology Standards - Volume 2 that provides increase in percent impervious for specific land use improvements. This information is used to determine the average impervious area and to adjust for the impact in each Zone of the development types and their related impact on the trunk drainage facilities.

When calculating drainage fees, the following special considerations may apply:

- Traditional school and church campus developments may be treated as 50% impervious area so that they may pay one fee allowing them to build and rebuild without further fee collection.
- No fee is charged for areas encumbered by open space, creeks, bio-swales and detention basins.

Typical Development

The Sacramento County Planning Department provided information on typical zoning

countywide (Table 2). This information is used to determine the average impervious area and to adjust for the impact in each Zone of the development types and their related impact on the trunk drainage facilities.

The basic components of the Fee Plan include:

- Closed Conduit (Pipes)
- Channel and Basin Excavation
- Basin Real Estate
- Railroad Bridges and Over-chutes
- Utility Relocation
- Engineering
- Zone Administration

Table 1
Land Use vs Percent Imperviousness

Land Use	Percent Imperviousness
Highway Parking	95
Commercial/ Office/ Retail	90
Industrial	85
Apartments 31+ du/ac	80
Mobile Home Park	75
Apartment/ Condo (13-30 du/ac)	70
Residential 8-10 du/ac	60
Residential 6-8 du/ac	50
Residential 4-6 du/ac	40
Residential 3-4 du/ac	30
Residential 2-3 du/ac	25
Residential 1-2 du/ac	20
Mowed grass with graded and pipes to drain	20
Residential 0.5-1 du/ac	15
Residential 0.2-0.5 du/ac	10
Park without piped drainage	10
Residential <0.2 du/ac	5
Open Space	2

Table 2

Typical Zoning in Built-Out Areas

Approximate Acres of Zoning (Unincorporated County, Elk Grove, Citrus Heights) (1)

	Acres	% of Total	Imperviousness	% of Land Use	Average Impervious Area (3)
RD 1-3					
RD 1	466.90				
RD 2	5,342.78				
Total	**5,809.68**	**9.20%**	20%	9.20%	1.84%
RD 3-5					
RD 3	2,958.49		30%	4.68%	1.41%
RD 4	3,288.98		40%	5.21%	2.08%
RD 5	29,159.39		40%	46.17%	18.47%
Total	**35,406.86**	**56.06%**			
RD 5-7					
RD 7	2,884.71		50%	4.57%	2.28%
Total	**2,884.71**	**4.57%**			
RD 15 - 40 (2)	**3,861.09**	**6.11%**	70%	6.11%	4.28%
Commercial	**6,715.90**	**10.63%**	90%	10.63%	9.57%
Park/Open Space	**8,482.13**	**13.43%**	15%	13.43%	2.01%
Grand Total	**63,160.37**	**100.00%**		100.00%	41.94%

1) Acreage totals do not include parcels that have more than one zoning (RD 00, Z 00 parcels) nor does it include parcels in Special Planning Areas (SPA)
2) Acreage include single-family houses
3) Determined percent land use from the acreages listed in the second column and multiplied by the percent impervious area. The sum of this column equals the weighted average percent impervious area.

Source of first three columns: Tim Kohaya, Sacramento County Planning Dept.- February 2003

Fee History

The Engineering News Record average between two numbers (twenty city average and San Francisco) construction cost index was 6035 in 1996 and 7112 in 2003, amounting to a total inflation increase of 17.8%, the fee was adjusted in 2004 to account for revised credit schedule, construction standards, and analysis more appropriately aligning with the County Hydrology Standards. The construction cost index for 2005 through 2008 increased that fee by 17.88%, then the Board of Directors froze the fee and credit schedules between 2008 and 2013. Since 2014, fees are annually adjusted by the yearly construction cost index annual inflation rate as shown in the following table.

Table 3

Year	Construction Costs Index
2014	3.85%
2015	None Applied[1]
2016	0.666%
2017	4.017%
2018	3.395%
2019	1.869%
2020	3.764%
2021	2.179%
2022	8.618%
2023	6.766%
2024	1.277%
2025	0.585%

Credits for Construction of Trunk Drainage

The overall intention of the trunk drainage fee and credit program is to compensate developers for installing facilities that serve their neighbors. The credits are not intended to fully compensate developers for the drainage facilities presuming that every development would need to establish a drainage system. It is in the best interest of the community to develop drainage systems that are master planned for the watershed, not merely the interest of an individual development. Consequently, partial compensation for trunk drainage has been the standard for the Agency since 1965.

Minor drainage systems serve less than 30-acres of watershed and trunk drainage serves more than 30-acres. This is a bright line, and this program intentionally offers no credits for minor drainage of any sort.

[1] The 2015 Fee Plan update revised fees based on input from the building industry, therefore no annual adjustment was applied.

Measurement and Payment of Credits

All credits shall be allocated and managed pursuant to Chapter 2.55 of Water Agency Code, Title 2. Where conflicts arise the Water Agency Code shall take precedence.

a) Trunk drainage pipe will be paid by as-built measured lineal foot from center of junction structure or manhole, at the unit prices listed in Schedule D, which includes excavation, traffic control, shoring, bedding and backfill.

b) Four-inch-thick concrete channel lining shall be paid at the unit price listed in Schedule D. If the design thickness is different than 4", the revised unit price shall be calculated and paid. That is, a 5" thick lining shall be paid at 125% the price listed per as-built measured square foot. The unit price includes rebar, wire mesh, grading, and all leveling material (aggregate base rock and sand) under the slab.

c) Three-foot post and cable fence shall be paid per as-built measured lineal foot at the unit price listed in Schedule D, which includes a complete fence.

d) Pipe gate shall be paid at the unit price per each as listed in Schedule D. This assumes a pipe gate with three or four pipes of 15-foot width and shall be adjusted based on as-built post to post width. For example, an 18-foot-wide gate shall be paid at 120% the price listed.

e) Six-foot-high chain-link fence shall be paid per as-built measured lineal foot at the unit price listed in Schedule D, which includes a complete fence. If the fence is more or less than 6 feet high, the price shall be adjusted. That is, an 8' high chain-link fence shall be paid at 133% of the price listed.

f) Six-foot-high chain-link gate shall be paid per each at the unit price listed in Schedule D, which includes a complete fence. This is for a gate width, measured post to post, of 16 feet. If the width is different, the unit price shall be adjusted. That is a 12-foot-wide gate shall be at 75% of the unit price listed.

g) Signs required by the Department of Water Resources, or a state or federal resource agency, shall be paid per as-built measured square foot sign face area, at the unit price listed in Schedule D, which includes a complete sign. There are two prices: for 16 square feet or smaller and for signs that are larger than 16 square feet.

h) Miscellaneous metal, such as: handrails, access racks, debris racks, flap gates shall be paid per as-built calculated weight per unit price listed in Schedule D. This information should come in the form of an initial estimate based on the density of the metal and verified by a receipt or invoice from the vender, or other method of checking the weight of material used. Nuts and bolts and minor appurtenances are included in the unit price and not included in the weight paid. Manhole rims and lids are <u>not</u> miscellaneous metal.

i) Channel excavation shall be paid by as-built measured cubic yard (neat line per the plans) at the unit price listed in Schedule D. Volume can be calculated manually by average end cross section or by digital methods. The same unit price is paid for short haul scraper excavation and for long haul truck export. The original ground for use in determining the excavated quantity shall be the lowest of either the existing ground or the finish development grade.

j) Basin excavation shall be paid by as-built cubic yard at the unit price listed in Schedule D. This can be done manually by average end cross section or by digital methods. The same unit price is paid for short haul scraper excavation and for long haul truck export. The original ground for use in determining the excavated quantity shall be the lowest of either the existing ground or the finish development grade.

k) Erosion control riprap shall be paid per as-built ton placed neatly per the approved plans at the unit prices listed on Schedule D. Estimate of tons of riprap can be done based on specific gravity and neat lines on plans. The tons shall be verified by weigh slips, if this amount varies from the estimated amount, field measurements to assure that the construction approximates the neat line approved drawings may be required.

l) Access ramps, driveways and maintenance road materials: structural sections of asphalt concrete on aggregate base rock, aggregate base rock alone, decomposed granite, and geotextile fabric shall be paid per as-built square feet at the unit price listed on Schedule D, which includes all appurtenances, and no additional compensation shall be allowed.

m) Repairing asphalt concrete surfaces shall be paid per as-built quantities and the unit prices listed in Schedule D. Asphalt concrete patching shall be paid at the listed unit price per square foot regardless of thickness, saw cutting, temporary cut back, trench plates, trench guarantee requirements or traffic control. The measured quantity shall be the t-trench width per the Construction Specifications. This item is only paid when the patch paving is the final accepted product. That is, if the existing asphalt concrete is to remain, patch paving is to be done, and the surface is overlaid or slurry sealed, patch paving shall be credited. However, if the surfacing is removed for a greater width than the trench patch, due to requirements of the inspector or others, patch paving credit shall not be allowed.

n) Repair of concrete sidewalks, curbs and gutters is not credited.

o) Hydroseeding shall be paid per as-built measured area, top of bank to top of bank of the drainage channel only, at the unit price listed on Schedule D.

p) Miscellaneous concrete shall be paid per the as built calculated cubic yard at the unit price listed on Schedule D, and includes (without additional allowance) all rebar, excavation, grading, rock and sand base, and backfill. Miscellaneous concrete is paid in two broad categories: formed structures (junction boxes, headwalls, box culverts, and stairways) and flat work (flat pads, driveways, and weirs). The listing of these items does not infer that they are necessarily creditable. For example, if non trunk drainage pipes coming to a junction with the trunk pipe system create the need for a junction box, the credit shall be the least expensive of the junction box or a manhole that hypothetically would have been used if it were not for the non-trunk pipes. Note that box culverts are almost always paid by the funding mechanism that is construction the roadway and not the Water Agency.

q) Under unusual circumstances trunk drainage construction not listed on Schedule D may be required on the approved improvement plans, in those cases the Board of Directors may authorize credits based on adequate justification of price. Refer also to the appeals process, chapter 1.15 of title 1. Unusual circumstances of construction may <u>not</u> include

construction of minor drainage, construction costs differing from Schedule D, traffic control, excavation depth, shoring, repair of surfaces, trench cut fees, environmental mitigation, pump stations, nor interaction with property owners.

r) Acquisition of basin real estate shall only be allocated credits in accordance with Title 2 and as follows:

   i. The basin is deemed to be regionally beneficial for flood control meaning:
      1. Mitigating upstream proposed development and/or correcting existing downstream flooding problems identified in an approved drainage master plan; and
      2. Typically having a side channel weir adjacent to the channel from which peak flow is to be attenuated by the basin.
   ii. When the basin is also used for stormwater quality treatment, the basin land credit will be adjusted to the minimum size necessary for the flood control benefit; and
   iii. The value will be determined per Section 2.40 and is necessarily limited by the amount estimated in this fee plan.
   iv. The Agency is under no obligation to acquire land and shall only act as a willing buyer when determining the credit agreement value.
   v. There is no land value credits available for stormwater basins or 'hydromod' only basins.
   vi. For combined basins with regionally beneficial flood control, the real estate credit is calculated based on a theoretical stand-alone flood control basin.

s) Items that are expressly not creditable, thus not included in the fee plan, are wetland mitigation, real estate except as stated above, and new pump plants.

Annual Adjustment of the Fee Schedule "A" and Credit Schedule "D"

Schedule A Fees and Schedule D credits are revised annually in accordance with sections 2.50.080 and 2.55.060 respectively of Title 2 of the SCWA Code. Construction costs indexes from the Engineering News Record magazine are used to adjust fees and credits every March 1 or thereabouts.

Zone 11A

Several drainage master plan areas within Zone 11A, totaling 9,188 acres of proposed development were considered in updating this Fee Plan. Trunk drainage quantities needed for full development of each plan area were identified from master drainage plans or public facility finance plans. The trunk drainage quantities from each plan are summed and presented later in this plan in Table 6.

Planning areas considered in developing this fee study include:

- North Vineyard Station Specific Plan and Florin Vineyard Gap Community Plan - backbone channel improvements along Elder and Gerber creeks are complete. Over half of the North Vineyard Station Specific Plan area has been developed and development has begun in areas of the Florin Vineyard Gap plan area.
- Vineyard Springs – improvements to the Gerber Creek channel are complete and development is over two-thirds complete.
- Newbridge Specific Plan – development has not yet begun.
- Jackson Township Specific Plan– development has not yet begun.
- Mather South Community Master Plan - development has not yet begun.
- West Jackson Highway Master Plan - development has not yet begun.
- Cordova Hills Special Planning Area – subdivision plans have been submitted to the County for review.

To estimate the expected drainage fees collected within Zone 11A, the following future planned land use areas were summed, North Vineyard Station, Vineyard Springs, Newbridge, Mather South, Jackson Township, West Jackson Highway, and Cordova Hills. Current fees were applied to the land use areas and the cost is totaled in Table 4.

Table 4

Zone 11A Master Plan Areas Proposed Development

Land Use Types	Acres	Imperviousness[2]	Fees per Acre (Mar 3, 2025)	Estimate of Total Fees Collected
Residence on 5 acres (RD 0.2)		5%	$0	$0
Residence on 3.5 acres (RD 0.3)	34	10%	$6,771	$231,365
Residence on 2 acres (RD .5)		15%	$13,505	$0
Residence on 1 acre (RD 1)	144	20%	$17,981	$2,596,316
Residence on .5 acre (RD 2)	1,040	25%	$18,517	$19,259,881
Residence on .25 acre (RD 4)	1,306	30%	$21,011	$27,450,817
Residence on .2 acre (RD 5)	3,424	40%	$21,745	$74,462,411
Residence on .14 acre (RD 7)	429	50%	$22,788	$9,776,052
Residence on .10 acre (RD 10)	62	60%	$24,758	$1,529,992
Residential RD 20 to RD 30	509	70%	$26,404	$13,451,480
Mobile Home Park		75%	$27,267	$0

[2] Sacramento County Hydrology Standards percent imperviousness matched to Schedule A by land use categories

Table 4 - continued

Land Use Types	Acres	Imperviousness[3]	Fees per Acre (Mar 3, 2025)	Estimate of Total Fees Collected
Industrial	303	85%	$28,664	$8,676,764
Commercial (office/ retail)	1,150	90%	$29,196	$33,574,478
Parking Lot	277	95%	$29,196	$8,087,292
Public School Campus	203	50%	$22,788	$4,636,957
School Campus with Detention		50%	$11,393	$0
Sports Field - graded with field drains	219	50%	$17,671	$3,875,250
Sports Field - no piped field drains	86	5%	$6,771	$584,330
Sports Field with detention		5%	$3,386	$0
Impervious area of park		100%	$29,196	$0
TOTALS	9,188.9			$208,193,386

Zone 11A Cash Flow

Accounting for Zone 11A occurs in Fund 315A. The fund is healthy and has been able to pay its reimbursement obligations. Zone A is the fastest growing area of the County. The following tables are based on current assumptions of development in master planned growth areas.

Fee Plan Components

Closed Conduits (Pipes)

Storm drain pipes and manhole junctions are needed to convey water from developed areas and roadways to prevent water from ponding during frequent storm events. Storm drain pipes are designed and sized using 'Nolte' flows and the design requirements contained in the Sacramento County Improvement Standards. Storm drain pipes are limited to areas draining no more than 160 acres or having a capacity of 72". Pipes greater than 72" are allowed in certain exceptional cases such as areas with very small hydraulic gradients.

Storm drain pipe estimates for the Zone 11A plan areas were compared to the new Schedule D credit unit prices to determine this component of the fee plan.

Peak Flow Mitigation

All piped drainage ultimately discharges to a constructed or natural open channel. Trunk drainage channels are constructed whenever an area cannot be piped either for environmental reasons or when the size of the necessary pipe exceeds 72" diameter. There are also occasions when existing open-channel conveyances are widened or otherwise improved.

Channel excavation volumes for several specific plan areas were compared to the new Schedule D credit unit prices to determine this component of the fee plan.

[3] Sacramento County Hydrology Standards percent imperviousness matched to Schedule D by land use categories

Peak flow mitigation may include the following:

- Concrete lining
- Interpretive signs
- Channel excavation
- Maintenance access
- Fencing
- Hydroseeding
- Existing pump station improvements
- Floodwall to mitigate existing flooding concerns

Volume Mitigation

Peak flow detention basins are constructed to attenuate high water to accommodate a downstream constraint or impact to a floodplain or stream confluence. For the improvement of storm water quality, detention volume is often added to the bottom of the flood basin volume creating a wet volume area for settling of particulates from the water. Sometimes basins are used to address the impacts of hydromodification to the receiving creek and detention, and outlet control is incorporated into design of the basin.

Volume impacts are mitigated in the form of floodplain management, pump station operation, or detention. Typically, basins are used to temporarily detain flows in order reduce runoff to pre-development levels or without adverse flooding.

Basin Real Estate

There will be many detention basins of various function in these zones. Basin real estate credits are necessarily limited only to those basins that are in accordance with the description under the Measurement and Payment section above.

Railroad Bridges

Occasionally railroad bridges cross over creeks and channels in developing areas must be widened or deepened to allow for the design of hydraulics. The channel for two railroad crossings along Elder and Gerber creeks were widened and Zone 11A will fund the reconstruction of the railroad bridges.

Utility Relocation

Proper planning and engineering discovery will avoid utility conflicts. When conflicts do arise, the utility is generally required to relocate at no cost to the Agency. There is a nominal budget for utility relocation that is only available when all other avenues are exhausted.

Engineering

There is an 8 percent allowance for engineering that is applied to all construction components (pipes, channels, and detention basins) of the drainage credit agreements. This is not intended to be full compensation; indeed, it is only intended to compensate the developer for a reasonable portion of the engineering costs associated with the fact that trunk drainage facilities typically serve other upstream, downstream and adjacent properties.

Administration

Zone 11A administration costs were tabulated below for fiscal year 2001 current as a percentage of the revenue (sum of cash fees and credits), for items 1, 2, and 5 below. Items 3 and 4 are added in this Fee Plan.

1. Administration (external expenditures) includes legal notices, public outreach, blue printing, copying, postal service, supplies, permits, consultant contracts, accounting auditing services, fiscal services staff, legal counsel, and specialized computer software.
2. Administration (Department of Water Resources labor) includes staff time reviewing hydrology and hydraulic analyses, planning applications, improvement plans and environmental documents involving trunk drainage. It also includes administration of the credit and reimbursement agreements pursuant to this Fee Plan.
3. Administration (SWPPP and minor drainage) includes Department of Water Resources staff time reviewing storm water pollution prevention plans, erosion control plans, grading and drainage for shed areas smaller than 30-acres.
4. Administration (NPDES program labor) includes Department of Water Resources staff time implementing the National Pollution Discharge Elimination System, an ever-improving effort to improve the quality of surface water as it is conveyed to streams and rivers.
5. Administration (Other County labor) includes: a nominal budget for handling plan intake, accumulating comments and determining drainage fees (Land Development and Site Improvement Review), Building Inspection Division's accounting and cashier services for collection of fees pursuant to the Plan, accounting services for the administration of the Plan, obtaining as-built field quantities, and computer technical support.

The fee component for Department of Water Resources Labor includes master plan review, routine improvement plan review, and administration of the Zone 11A fee plan.

The average of the five years FY2011-2020through FY 2023-2024 is shown below, with calculated average overhead costs.

Table 5
Zone 11A Administrative and Management Costs

Account	Annual Average from FY2019/20 to FY2023/24
Administrative Overhead	$19,185
Consultants	$104,225
Legal Services	$10,157
Water Resources Staff Labor	$716,220
Real Estate Labor	$12,678
Tech Resources Labor	$111,381
Total	$973,845

Trunk Drainage Costs

A summation of the trunk drainage facilities required for full buildout of the Zone 11A plan areas is included in Table 6. Drainage studies and public financing plans were used to identify the trunk drainage requirements for build-out of these plan areas. A comparison of the costs of trunk drainage for the Zone 11A plan areas based on Schedule D Unit Prices established by this Fee Plan is used to evaluate credits and fees for all zones.

Table 6

Zone 11A Trunk Drainage and Costs

Zone 11A Trunk Drainage	Units	Quantity	Unit Costs	Total Cost
Storm Drainage Pipe Size:				
12"	lf	478	$94.97	$45,349
15"	lf	0	$106.00	$0
18"	lf	1,443	$122.03	$176,094
21"	lf	0	$138.97	$0
24"	lf	36,166	$152.31	$5,508,331
27"	lf	574	$176.59	$101,356
30"	lf	25,072	$181.78	$4,557,562
33"	lf	1,100	$213.52	$234,874
36"	lf	47,114	$222.35	$10,475,998
42"	lf	26,424	$304.35	$8,042,059
48"	lf	16,760	$350.36	$5,871,865
54"	lf	7,830	$372.00	$2,912,788
60"	lf	27,020	$414.59	$11,202,417
66"	lf	7,931	$528.35	$4,190,557
72"	lf	7,025	$611.60	$4,296,512
84"	lf	0	$611.60	$0
96"	lf	0	$611.60	$0
Manhole Size:				
48"	per ea	140	$8,974.88	$1,256,483
60"	per ea	143	$13,059.92	$1,867,568
72"	per ea	82	$16,116.25	$1,321,533
84"	per ea	32	$18,818.39	$602,188
96"	per ea	0	$23,161.10	$0
108"	per ea	0	$24,671.83	$0
Saddle MH	per ea	123	$11,580.53	$1,424,405
4" Thick Channel Lining	per sf	0	$15.00	$0
Fencing and Gates:				
3' Post and Cable	per lf	68,793	$33.47	$2,302,830
Pipe Gate	per ea	51	$6,500.00	$331,500
6' wrought iron with gates	per lf	15,171	$65.18	$988,845
6' chain link with gates	per lf	1,604	$39.47	$63,305

Table 6 - Continued

Zone 11A Trunk Drainage and Costs

Zone 11A Trunk Drainage	Units	Total Quantity	Unit Costs	Total Cost
4' chain link with gates	per lf	2,113	$36.47	$77,047
Signs 16 sf or Smaller	per ea	0	$730.55	$0
Signs greater than 16 sf	per ea	0	$1,095.85	$0
Miscellaneous Metal	per lb	24,500	$14.77	$361,764
Channel Excavation	per cy	487,052	$8.00	$3,896,415
Basin Excavation	per cy	4,133,937	$7.50	$31,004,528
Erosion Control Riprap:				
Class 1 backing rock	per ton	0	$108.57	$0
Class 2 backing rock	per ton	13,989	$115.79	$1,619,859
1/4 ton	per ton	6,190	$126.66	$784,005
Cobble	per ton	1,151	$115.79	$133,246
GeoWeb - rock weir	per ton	0	$113.24	$0
Access and Maintenance Roads:				
1" thick asphalt concrete	per sf	19,260,640	$1.00	$19,260,640
1" thick aggregate base	per sf	8,178,790	$0.60	$4,907,274
1" thick decomposed granite	per sf	0	$0.70	$0
Geotextile fabric	per sf	3,218,238	$0.50	$1,609,119
Repair Surfaces:				
Asphalt concrete patch paving	per sf	0	$18.00	$0
Hydroseed	acre	213	$5,000.00	$1,063,616
Miscellaneous Concrete:				
Junction box	per cy	0	$3,021.77	$0
Headwall	per cy	1,902	$3,021.77	$5,748,919
Stairway	per cy	0	$3,021.77	$0
Flat pad	per cy	1,742	$1,809.44	$3,152,614
Ramp	per cy	1,808	$1,809.44	$3,271,474
Driveway	per cy	0	$1,809.44	$0
Weir Structure	per cy	638	$1,809.44	$1,154,988
Railroad Bridges	ls	1	$1,841,242	$1,841,242
			Sub Total	$147,661,170
			8% Engineering	$11,812,894
Basin land acquisition	acres	245.7	$179,895.00	$44,200,202
Admin and Review	Yr	20	$973,845	$14,6,900
			Total	$223,151,165

The trunk drainage cost for full development of the Zone 11A plan areas is projected at $223,151,165 considering unit costs are increased up to 100 percent for each item. Future Zone 11A reimbursements, outstanding credit agreements and project construction costs are $943,744, $2,516,981 and $7,042,049 respectively. Zone 11A development fee revenue is estimated at $208,193,386 for full buildout of the plan areas. Loans repayments from Zones 11W and 11X is $10,455,926, and there is a current budget reserve of $27,088,279[4]. The current fees are considered sufficient to sustain the Zone 11A drainage fee program and are not adjusted for Zone 11A under this Fee Plan revision.

Table 6

Zone 11A Program Costs and Revenues

Expenditures	
Total Trunk Drainage Costs	$223,151,165
Reimbursements	$943,744
Outstanding Credits	$2,516,981
Construction Project Costs	$7,042,049
TOTAL	$233,653,939
Revenue	
Development Fees	$208,193,386
Loans Repayment	$10,445,926
Reserves	$27,088,279
TOTAL	$245,727,591

Sub-Fees Within Zone 11A

Beach Stone Lake Flood Volume Mitigation Fee

The Beach Stone Lake Volume Mitigation Fee (Zone 11X) was initially established in March 1996 and is adjusted annually in accordance with Section 2.50 of Title 2. All of Zone 11A contributes to the Zone 11X Fee in an amount up to $388 per acre of development (as of March 2025). These funds are used to mitigate flooding, including but not limited to raising houses, constructing flood walls or berms around structures, raising wells, filling basements, adding foundation vents, and reimbursing residents for flood insurance.

The Beach Stone Lake mitigation fee component is described in Appendix 1 fee Schedule "A" and is not revised herein other than to inflate it by the same amount as Zone 11A.

Zone 11A Fee Reductions

In the 1996 Fee Plan, certain areas were described as reduced Zone 11A fee areas; this continued in the 2004 and 2015 fee plans and continues herein. These reduced fees are inflated by the same amount as Zone 11A.

Within the proposed Zone 11A fee area, there are specific developments which were assessed a reduced Morrison Creek Stream Group Fair Share (MCSG) fee rate. These

[4] Zone 11A Financial Status Report Working Capital Tab accessed 5-21-2025.

developments are: Laguna West, Lakeside, Elliott Ranch South, Laguna Business Park (Laguna Oaks, Parkside Village), and Calvine-99 SPA (Property "A").

These developments constructed extensive trunk drainage and detention facilities. Rather than giving them drainage credits against the full fee, they were given a reduction in the old MCSG fee rate based on the value of the facilities constructed. With creation of Zone 11A and its revised fee, in 1996, these areas will be assessed at an appropriately revised fee rate. An explanation of the fee reduction is below.

Laguna West, Lakeside, Elliott Ranch South

These developments provided drainage facilities which were allowed to receive full reduction of most component costs of the fee. The exceptions were for trunk pipe and channel construction, which are assessed at the full rate.

Laguna Business Park (Laguna Oaks, Parkside Village),

Calvine-99 SPA (Property "A")

These developments provided drainage facilities which were comparable to drainage master plan floodplain corridors. These facilities are located along Elk Grove Creek (Laguna Business Park) and Strawberry Creek (Calvine 99SPA). These facilities were significant in size and allowed for complete reduction of many of the component costs of the fee. The exceptions were for dual-purpose detention construction and property acquisition. For these components the developments received a 56% reduction of the component fee rates. Also, no reduction in component fee rate was given for trunk pipe construction, channel construction or volume detention.

The Zone 11A fees for these aforementioned areas are detailed in fee schedule. They were each increased by an amount associated with the increase in Schedule D and the increased cost of Department of Water Resources staff for plan check and storm water pollution prevention. These fees will be revised annually pursuant to Section 2.50.080.

Zone 11B

Zone 11B is that area draining toward the American River. There are numerous opportunities for infill and redevelopment, but trunk drainage construction related directly to development will be limited as most of the Zone is built out and most of the infill projects are smaller only requiring local drainage infrastructure that ties to established drainage systems. Department of Water Resources labor costs for plan review and program administration account for a disproportionate percentage of the revenue due to the size and complexity of infill development activities prevalent in this Zone.

Fee Plan for Zone 11B - Components

The following shed areas were studied in the 1996 Fee Plan to validate the continued use of the then Zone 11 wide fees. The watershed areas listed below represent the net areas after a 20% reduction for roads and other unbuildable areas.

Table 7

Creek	Sample Watersheds Net Area
Chicken Ranch Slough	2,436 acres
Strong Ranch Slough	861 acres
Verde Cruz Creek	888 acres
Coyle Creek	758 acres
Total	4,943 acres

Closed Conduit (Pipes)

In the 1996 Fee Plan, a sample trunk facility inventory was summarized over an area of 4,943 acres in the Chicken Ranch Slough, Strong Ranch Slough, Verde Cruz and Coyle Creek watersheds to determine the typical trunk pipe facilities in Zone 11B. This analysis was carried forward in the 2004 and 2015 fee plan updates and is continued in the 2025 Fee Plan update.

These pipe and manhole quantities were multiplied by the 2024 Schedule D unit prices to determine the fee component, listed below.

Table 8

Sample Closed Conduit Inventory

Chicken Ranch/ Strong Ranch Sloughs, Verde Cruz and Coyle Creeks

Storm Drainage Pipe Size:	Unit	Unit Costs	Quantity	Cost
21"	lf	$138.97	18,125	$2,518,831.25
24"	lf	$152.31	38,492	$5,862,716.52
27"	lf	$176.59	7,400	$1,306,766.00
30"	lf	$181.78	20,320	$3,693,769.60
33"	lf	$213.52	1,145	$244,480.40
36"	lf	$222.35	19,620	$4,362,507.00

Table 8 - continued

Storm Drainage Pipe Size:	Unit	Unit Costs	Quantity	Cost
42"	lf	$304.35	18,978	$5,775,954.30
48"	lf	$350.36	4,342	$1,521,263.12
54"	lf	$372.00	5,245	$1,951,140.00
60"	lf	$414.59	1,990	$825,034.10
66"	lf	$528.35	1,300	$686,855.00
72"	lf	$611.60	1,007	$615,881.20
84"	lf	$611.60	675	$412,830.00
Saddle Manhole	ea	$11,580.53	233	$2,698,263.49
				$32,476,291.98

Peak Flow and Volume Mitigation

Zone 11B drains to natural streams and legacy channels. Peak flow mitigation may include the following:

- Concrete lining
- Interpretive signs
- Channel excavation
- Maintenance access
- Fencing
- Hydroseeding
- Existing pump station improvements
- Floodwall to mitigate existing flooding concerns

Volume mitigation includes flood control and stormwater quality basins construction for watershed areas greater than 30-acres, including some or all of the following:

- Basin land acquisition when the facility is regionally beneficial flood control for the watershed, approved by the Agency Engineer in accordance with Section 2.40 and in accordance with the requirements found in the Measurement and Payment section of this Plan
- Basin excavation
- Outlet features
- Maintenance access
- Fencing
- Hydroseeding

Items that are expressly not creditable, thus not included in the fee plan, are wetland mitigation and channel right of way acquisition.

The 1996 sample inventory of trunk drainage items for peak flow and volume mitigation are included in Table 9. This inventory does not represent a full accounting of all related trunk drainage items such hydroseeding, rip rap, and miscellaneous metal.

Table 9

Sample Trunk Inventory - Excavation, Concrete and Fencing
Chicken Ranch Slough, Strong Ranch Slough, Verde Cruz and Coyle Creeks

Storm Drainage Pipe Size:	Unit	Unit Costs	Quantity	Cost
Excavation	cy	$8.00	173,389	$1,387,112.00
4" Concrete Lining	sf	$15.00	25,862.32	$387,934.81
Fencing (6' chain-link)	lf	$65.18	11,6314	$7,581,346.52
			TOTAL	$9,356,393.33

Railroad Bridges

There are no anticipated railroad bridges included in this Fee Plan.

Utility Relocation

Proper planning and engineering discovery will avoid utility conflicts. When conflicts do arise, the utility is generally required to relocate at no cost to the Agency. There is a nominal budget for utility relocation that is only available when all other avenues are exhausted.

Engineering

There is an 8 percent allowance for engineering that is applied to all construction components (pipes, channels, and detention basins) of the drainage credit agreements. This is not intended to be full compensation; indeed, it is only intended to compensate the developer for a reasonable portion of the engineering costs associated with the fact that trunk drainage facilities typically serve other upstream, downstream and adjacent properties.

Administration

Zone 11B administration costs were tabulated below for fiscal year 2001 current as a percentage of the revenue (sum of cash fees and credits), for items 1, 2, and 5 below. Items 3 and 4 are added in this Fee Plan.

1. Administration (external expenditures) includes legal notices, public outreach, blue printing, copying, postal service, supplies, permits, consultant contracts, accounting auditing services, fiscal services staff, legal counsel, and specialized computer software.
2. Administration (Department of Water Resources labor) includes staff time reviewing hydrology and hydraulic analyses, planning applications, improvement plans and environmental documents involving trunk drainage. It also includes administration of the credit and reimbursement agreements pursuant to this Fee Plan.
3. Administration (SWPPP and minor drainage) includes Department of Water Resources staff time reviewing storm water pollution prevention plans,

erosion control plans, grading and drainage for shed areas smaller than 30-acres.

4. Administration (NPDES program labor) includes Department of Water Resources staff time implementing the National Pollution Discharge Elimination System, an ever-improving effort to improve the quality of surface water as it is conveyed to streams and rivers.
5. Administration (Other County labor) includes: a nominal budget for handling plan intake and accumulating comments (Land Development and Site Improvement Review), Building Inspection Division's accounting and cashier services for collection of fees pursuant to the Plan, accounting services for the administration of the Plan, obtaining as-built field quantities, and computer technical support.

The fee component for Department of Water Resources Labor includes master plan review, routine improvement plan review, and administration of the Zone 11B fee plan.

The average of the five years FY20-21 through FY 24-25 is shown below, with calculated average overhead costs.

Table 10

Zone 11B Administrative, Management and Review Costs

Account	Annual Average from FY2019/20 to FY2023/24
Administrative Overhead	$2,024
Consultants	$28,176
Legal Services	$1,111
Water Resources Staff Labor	$460,882
Real Estate Labor	$2,705
Tech Resources Labor	$10,518
Total	$505,416

Trunk drainage costs total $41,832,685 over the sample watersheds identified in the 1996 Fee Plan. Administrative, management and review costs over the entire Zone 11B is estimated at $505,416 per year, or a total of $25,270,794 if accrued over a period of 50 years, which is estimated as the period to fully develop the drainage infrastructure within the sample watersheds. The total trunk drainage and admin cost is $67,103,479, and when divided by the sample watersheds area is $13,575 per acre. The March 2025 per acre Zone 11B drainage fee for RD7 development (50% imperviousness) is $15,093. Comparison of the per acre development costs over the sample watersheds to the RD 7 Zone 11B per acre fee indicates the current Zone 11B fee program is sufficient to fund drainage development within the Zone.

Future develoment within Zone 11B is antcipated to be limited as the Zone is over 95% developed. Development projects will be comprised of smaller infill or redevelopment projects that are not expected to include trunk drainage or only included limited sections of storm drain pipe that connects to established systems. There are no large flood control projects planned at this time that Zone 11B could be used to fund.

The total cost of all Zone 11B credits issued since year 2000 is $4,064,742 using the updated unit costs established in this Fee Plan. About half of the costs of the credits is attributable to the Gum Ranch/ South Arcade Basin project which is the last large development project expected within Zone B. An estimate of admin and plan review costs is made by multiplying the previous 5 year average cost by 25. Development fees collected over the last 25 years are estimated by multiplying the previous 5 year average by 25. Table 11 compares the Zone 11B expenditures and revenue projection for the next 25 years. The comparison is comparable, and current fees are considered appropriate moving forward, especially considering there are no expected large projects that would be awarded credits.

Table 11

Zone 11B Program Costs and Estimated Revenues for the Next 25 Years

Expenditures	
Total Trunk Drainage and Land Acquisition Costs	$0
Admin and Plan Review Cost Estimate	$12,635,397
TOTAL	$12,635,397
Revenue	
Development Fees	$12,038,035
Reserves	$2,732,896
TOTAL	$14,770,904

Zone 11C

Zone 11C is that area draining to Dry Creek or to Natomas East Main Drainage Canal (Steelhead Creek). It includes Elverta, Rio Linda, Antelope and parts of Orangevale. There remain significant opportunities for growth in these areas.

The largest development area is the Elverta Specific Plan. Table 12 contains the estimated trunk drainage quantities and costs for the Elverta Specific Plan area based on the available draft financing plan.

Fee Plan for Zone 11C

Closed Conduit (Pipes)

The trunk pipe facilities estimated for Elverta Specific Plan 2014 draft trunk drainage finance estimate were compared with the new Schedule D credit unit prices to determine this component of the fee plan. The drainage components of the Elverta Specific Plan have been significantly revised since 2014, but an updated drainage finance plan is not currently available. Updates to the finance plan will be considered at the next Fee Plan update.

Peak Flow Mitigation

All piped drainage ultimately discharges to a constructed or natural open channel. Trunk drainage channels are constructed whenever an area cannot be piped either for environmental reasons or when the size of the necessary pipe exceeds 72" diameter. There are also occasions when existing open channel conveyances are widened or otherwise improved.

1. Channel excavation volumes for several specific plan areas were compared to the new Schedule D credit unit prices to determine this component of the fee plan.
2. Channel widths are increased in Zone 11A due to the Sacramento County Improvement Standards Section 9-11 in which the Manning's "n-value" was increased from the previously specified 0.060 to 0.080. This accounts for increased desire to create natural channels with reduced maintenance and better riparian habitat, pursuant to the goals of the Clean Water Act and the Endangered Species Act as well as the desires of the local citizens. This is further described in the appendix.
3. Storm Water Quality is improved by careful design of channel bottom grading and planting.

Peak flow mitigation may include the following:

- Concrete lining
- Interpretive signs
- Channel excavation
- Maintenance access
- Fencing
- Hydroseeding
- Existing pump station improvements
- Floodwall to mitigate existing flooding concerns

Table 12

Zone 11C Trunk Drainage and Costs

Zone 11C Trunk Drainage	Units	Quantity	Unit Costs	Total Cost
Storm Drain Pipe Size:				
12"	Lf		$94.97	$0.00
15"	Lf		$106.00	$0.00
18"	Lf		$122.03	$0.00
21"	Lf		$138.97	$0.00
24"	Lf	4,600	$152.31	$700,606.71
27"	Lf		$176.59	$0.00
30"	Lf	8,000	$181.78	$1,454,217.70
33"	Lf		$213.52	$0.00
36"	Lf	4,450	$222.35	$989,471.74
42"	Lf	3,430	$304.35	$1,043,920.82
48"	Lf	2,270	$350.36	$795,311.92
54"	Lf		$372.00	$0.00
60"	Lf		$414.59	$0.00
66"	Lf		$528.35	$0.00
72"	Lf		$611.60	$0.00
84"	Lf		$611.60	$0.00
96"	Lf		$611.60	$0.00
Manhole Size:				$0.00
48"	per ea		$8,974.88	$0.00
60"	per ea	18	$13,059.92	$235,078.49
72"	per ea	20	$16,116.25	$322,325.03
84"	per ea		$18,818.39	$0.00
96"	per ea		$23,161.10	$0.00
108"	per ea		$24,671.83	$0.00
Saddle MH	per ea	12	$11,580.53	$138,966.39
4" Thick Channel Lining	per sf		$15.00	$0.00
Fencing and Gates:				$0.00
3' post and cable	per lf		$33.47	$0.00
Pipe Gate	per ea		$6,500.00	$0.00
6' wrought iron with gates	per lf		$65.18	$0.00
6' chain link with gates	per lf	5,350	$39.47	$211,162.11
4' chain link with gates	per lf		$36.47	$0.00
Signs 16 sf or smaller	per ea	10	$730.55	$7,305.49
Signs greater than 16 sf	per ea		$1,095.85	$0.00
Miscellaneous metal (handrails, racks,	per lb		$14.77	$0.00
Channel Excavation	per cy	729,400	$8.00	$5,835,200.00

Table 12 - continued

Zone 11C Trunk Drainage and Costs

Zone 11C Trunk Drainage	Units	Quantity	Unit Costs	Total Cost
Basin Excavation	per cy	123,250	$7.50	$924,375.00
Erosion Control Riprap:				
Class 1 backing rock	per ton		$108.57	$0.00
Class 2 backing rock	per ton		$115.79	$0.00
1/4 ton	per ton	891	$126.66	$112,851.06
Cobble	per ton		$115.79	$0.00
GeoWeb - rock weir	per ton	8,320	$113.24	$942,145.09
Access and Maintenance Roads:				
1" thick asphalt concrete	per sf		$1.00	$0.00
1" thick agregate base	per sf	5,117	$0.60	$3,070.00
1" thick decomposed granite	per sf		$0.70	$0.00
Geotextile fabric	per sf		$0.50	$0.00
Repair Surfaces:				$0.00
Asphalt concrete patch paving	per sf		$18.00	$0.00
Hydroseed	per acre	16.3	$5,000.00	$81,500.00
Miscellaneous Concrete:				
Junction box	per cy		$3,021.77	$0.00
Headwall	per cy		$3,021.77	$0.00
Stairway	per cy		$3,021.77	$0.00
Flat pad	per cy		$1,809.44	$0.00
Ramp	per cy		$1,809.44	$0.00
Driveway	per cy		$1,809.44	$0.00
Weir Structure	per cy		$1,809.44	$0.00
Railroad Bridges	Ls			
			Sub Total	$13,797,507.55
			8% Engineering	$1,103,800.60
Basin land acquisition	Acres	16	$179,895.00	$2,878,320.00
			Total	$17,779,768.16

Channel excavation volumes and related trunk drainage improvements for the Elverta Specific Plan area was compared to the new Schedule D credit unit prices to determine this component of the fee plan.

Volume Mitigation

Peak flow detention basins are constructed to attenuate high water to accommodate a downstream constraint or impact to a floodplain or stream confluence. For the improvement of storm water quality, detention volume is often added to the bottom of the flood basin volume creating a wet volume area for settling of particulates from the water.

Volume impacts are accommodated in the form of floodplain management, pump station operation, or detention. Volume impacts were measured for a typical small 160-acre drainage shed, the point at which a large diameter pipe might discharge to a creek, stream or channel.

The total cost of basins included in several drainage master plans for specific plan areas was used to calculate the cost per acre of development. While it is realized that not every development will require a detention basin, the regional nexus is found as discussed earlier in this text and in Titles 1 and 2.

Assuming simple detention basin projects are the typical solution, the volume of storage that would be required was calculated using HEC1 software and the Sacramento Method.

Assumptions used for peak flow and volume:

- SacPre Zone 2, Elevation 100', Slope 0.50%, Soil Type C*, Shed 160-acres.
- Conveyance of the 10-year peak flow is conveyed without concern.
- Consider the volume above 10-year peak flow conveyance for build-out of the 160 acres to a total impervious percentage of 15% to 90%.

*NOTE: Soil type D was also run, yielding very similar results.

The above listed impervious percentages and the volume impact above the ten-year flow represents a fictitious build out of a 160-acre shed area with one type of development, edge to edge. This is done to determine a relative difference and is not intended to be indicative of any specific site or storm water shed.

Basin excavation volumes and related trunk drainage improvements for the Elverta Specific Plan area were compared to the new Schedule D credit unit prices to determine this component of the fee plan.

Basin Real Estate

There will be many detention basins of various function in this Zone. Basin real estate credits are necessarily limited only for those basins that are in accordance with the description under Measurement and Payment section above.

Basin land in the Elverta Specific Plan was compared to the new Schedule D credit unit price to determine this component of the fee plan.

Utility Relocation

Proper planning and engineering discovery will avoid utility conflicts. When conflicts do arise, the utility is generally required to relocate at no cost to the Agency. There is a nominal budget for utility relocation that is only available when all other avenues are exhausted.

Engineering

There is an 8 percent allowance for engineering that is applied to all construction components (pipes, channels, and detention basins) of the drainage credit agreements. This is not intended to be full compensation; indeed, it is only intended to compensate the developer for a reasonable portion of the engineering costs associated with the fact that trunk drainage facilities typically serve other upstream, downstream and adjacent properties.

Administration

Zone 11C administration costs were tabulated below for fiscal year 2004 to 2007 as a percentage of the revenue (sum of cash fees and credits), for items 1, 2, and 5 below. Items 3 and 4 are added in this Fee Plan.

1. Administration (external expenditures) includes legal notices, public outreach, blue printing, copying, postal service, supplies, permits, consultant contracts, accounting auditing services, fiscal services staff, legal counsel, and specialized computer software.
2. Administration (Department of Water Resources labor) includes staff time reviewing: hydrology and hydraulic analyses, planning applications, improvement plans and environmental documents involving trunk drainage. It also includes administration of the credit and reimbursement agreements pursuant to this Fee Plan.
3. Administration (SWPPP and minor drainage) includes Department of Water Resources staff time reviewing storm water pollution prevention plans, erosion control plans, grading and drainage for shed areas smaller than 30-acres.
4. Administration (NPDES program labor) includes Department of Water Resources staff time implementing the National Pollution Discharge Elimination System, an ever-improving effort to improve the quality of surface water as it is conveyed to streams and rivers.
5. Administration (Other County labor) includes: a nominal budget for handling plan in-take and accumulating comments (Land Development and Site Improvement Review), Building Inspection Division's accounting and cashier services for collection of fees pursuant to the Plan, accounting services for the administration of the Plan, obtaining as-built field quantities, and computer technical support.

The fee component for Department of Water Resources Labor includes master plan review, routine improvement plan review, and administration of the Zone 11C fee plan. The average of the four years FY19-20 through FY 23-24 is shown below in Table 13, with calculated average overhead costs. An estimate of admin and plan review costs is made by multiplying the previous 5-year average cost by 25 years. Projected development fees are based on full development of the Elverta Specific Plan are. Table 14 shows that Zone 11C program revenue is expected to exceed program costs.

Table 13
Zone 11C Administrative and Management Costs

Account	Annual Average
Administrative Overhead	$1,891
Consultants	$28,928
Legal Services	$2,205
Water Resources Staff Labor	$245,829
Real Estate Labor	$0
Tech Resources Labor	$21,153
Total	$300,007

Table 14
Zone 11C Program Costs and Revenues

Expenditures	
Total Trunk Drainage Costs	$17,779,768
Reimbursements	$99,537
Admin and Plan Review Cost Estimate	$7,500,186
TOTAL	$25,379,491
Revenue	
Development Fees	$26,708,895
Reserves	$8,302,929
TOTAL	$35,011,824

Sub-Fees Within Zone 11C

There are subzone fees in addition to Zone 11C, with fee amounts listed on the Fee Schedule, as described below.

Placer County Dry Creek Fair Share Fees

This supplemental fee is for the mitigation of impacts within Placer County and shall only be collected from new construction/development of properties that drain to Placer County. Linda Creek flows into Roseville and ultimately into Dry Creek consequently having a different impact and different fee than that amount charged to new construction in the portion of the Antelope area that drains toward Placer County. These fees are deposited to sub-accounts of Zone 11C and sent annually to Placer County where they are held in trust for specific improvements described in the Dry Creek Drainage Master Plan.

History

On October 6, 1987 a Memorandum of Understanding Concerning Flood Control, Drainage, and Water Conservation Activities in Placer, Sacramento and Sutter Counties and the City of Sacramento was signed (WA Resolution #779).

In April 1992, the Placer County Flood Control and Water Conservation District and Sacramento County Water Agency Final Report Dry Creek Flood Control Plan was published. The Plan recommends six structural and non-structural program elements as follows:

- Local detention basins
- Regional detention basins
- Channel improvements, levees, and floodwalls

- Bridge and culvert improvements
- Floodplain management or
- Regional data acquisition and flood warning system

January 23, 1996 Resolution 96-0056 and WA Resolution #2202 approved the Dry Creek Watershed Flood Control Program Final Environmental Impact Report (Control Number 95-0577). These resolutions found that the Final Environmental Impact Report for the Dry Creek Watershed Flood Control Program was adequate and agreed to establish a fair share fee for contribution to the project.

Dry Creek Watershed (flowing north across the County line and into Dry Creek)

Prior to improvement plan approval or recordation of the final map, whichever occurs first, a drainage fee as identified in the Placer County Dry Creek Watershed Flood Control Plan shall be paid. In 1996, the amount of the fee was $950.00 per acre for commercial and industrial land uses, and $125.00 per residential unit.

The fee shall be inflated now, and in the future inflated annually, by the ENR Construction Cost Index. The 1996 fee is increased 17.8% to 2003 dollars to $1119 per acre for commercial and industrial uses, and $147 per residential unit.

These funds are remitted annually to Placer County where they are to be held in interest bearing trust and used for activities specified in the April 1992 Plan or as amended. This fee shall continue to be deemed interim and shall be subject to periodic review.

Linda Creek Watershed

Payable prior to improvement plan approval or recordation of the final map, whichever occurs first, a fair share contribution. In 1996, the fair share contribution was $621 per acre for commercial and industrial land uses, and $490 per residential unit.

The fee shall be inflated now, and in the future inflated annually, by the ENR Construction Cost Index. The 1996 fee is increased 17.8% to 2003 dollars to $731 per acre for commercial and industrial uses, and $577 per residential unit (not to exceed $731 per acre).

These funds are remitted annually to Placer County where they are to be held in interest bearing trust and used for activities specified in the April 1992 Plan or as otherwise amended. This fee shall continue to be deemed interim and shall be subject to periodic review.

Steelhead Creek Fair Share Fee

The area east of Steelhead Creek (also known as the Natomas East Main Drain Tributaries, NEMDC) flooded in 1986 and again in 1995. High water was measured at an elevation of nearly 39.5 feet (NAVD) at Elkhorn Blvd and Elverta Road. Subsequent construction of the D15 pump station (including three pumps totaling 1000 cubic feet per second and an automatic gravity outlet) lowered the 100-year FEMA floodplain adjacent to the channel levee to elevation 33.5 feet (NAVD) at Elkhorn Blvd and 34.5 feet (NAVD) one mile north of Elverta Road. The Sacramento County Department of Water Resources regulates new construction using a conservative floodplain of elevation that is 2.2' higher than the FEMA

map. This allows for the possibility of one pump being out of service during a 100-year storm.

D15 pump station serves to lower the water surface elevation inside of the NEMDC levees by blocking Dry Creek backwater from backing up the canal while pumping the water into the downstream higher water surface. This system allows for gravity outfall from the 17,216 acres draining to the east side of NEMDC.

According to engineering analysis, when development of the basin east of NEMDC is completed, the all three pumps running scenario will yield a higher 100-year water surface elevation upstream of D-15 pump station, calculated to rise 1.2 feet, at the Elkhorn Blvd bridge. Therefore, to maintain the current regulated floodplain with the possibility of one pump failing during the 100-year event, one must add a fourth pump.

While the repair and replacement cost of the existing facility will be paid by other funds, the cost of mitigation due to volume impacts attributed to development should be an anticipated future cost of this Zone 11C Fee Plan.

As first presented in the 2004 Fee Plan update, the estimated cost to add a fourth pump to the D-15 Pump Station is $3,000,000 (based on other pump plants recently constructed and original cost of existing D-15). If it is constructed after 65% build out of the area, the fee per acre shall be:

($3,000,000 ÷ 17,216 acres) ÷ 65% = $268 per acre

The 17,216 acre watershed that drains to DO15 includes portions of Placer County.

Annual Fee Adjustment

Steelhead Creek Volume Mitigation Fee is adjusted annually.

Referring to volume impacts, see Table F3 in Appendix 3 of this text, and assuming an average one-acre residential zoning (percent impervious area of 20%) the fee shall be apportioned according to the adjusted component impact. This amount has and will continue to be inflated annually, per Section 2.50.080. This fee is detailed on the Zone 11C Fee Schedule.

The basin impact percentages are the same as those used in Zone 11A and 11C volume component calculations earlier in this text. The pump station D-15 component is centered around a typical 20% impervious area for the basin at build out. That is 63.42% is to 100% as 108.24% is to 171%. Therefore, the fee for a proposed development that has 50% impervious area is $457 per acre (2004 Fee Plan) which has been inflated to $826 as of March 2025.

The fee described above is inflated by the construction cost index through 2008, plus the CCI for 2013, and the adjustment for 11C fee for the 2015 Fee Plan update. Since 2015 the Zone 11C fees have been inflated annually in accordance with Section 2.50.080.

APPENDICES

1. Schedule A – Zone 11A, 11B, 11C Fees
2. Schedule D Unit Prices – for Credit Agreements
3. Development Impact Analysis
4. Pipe Sizing Analysis
5. Revenue vs. Expense Past Five Years
6. Projection of Revenue vs Expenses
7. History of Zone X
8. Template for Assignment of Drainage Credits Agreement

APPENDIX 1 – Schedule A Fees

Table 1
Schedule A Fees – Zone 11A

APPENDIX 1					
DRAINAGE FEE SCHEDULE "A"		Fee Schedule Effective March 3, 2025			
ZONE 11A FEES (per acre)					
LAND USE	**March 2025 Zone 11A Fee (per acre)**	**March 2025 Fee for Parcels Recorded before 8/16/2004 (per acre)**	**March 2025 Beach Stone Lake (per acre)**		
Raw Land and Open Space	$0	$0	$0		
Road Right-of-Way, greater than 40' [1]	$0	$0	$0		
Residence on 5.0 acres(+)	$0	$0	$0		
Equation [5]					
Residence on 3.5 acres	$6,771	$1,202	$21		
Equation [5]					
Residence on 2.0 acres	$13,505	$2,101	$38		
Equation [5]					
Residence on 1.0 acre	$17,981	$4,202	$77		
Equation [5]					
Residence on 0.50 acre	$18,517	$8,217	$156		
Equation [5]					
Residence on 0.25 acre	$21,011	$15,691	$311		
Equation [5]					
Residence on 0.20 acre	$21,745	$19,148	$388		
Equation [5]					
Residence on 0.14 acre	$22,788	$22,788	$388		
Equation [5]					
Residence on 0.10 acre	$24,758	$24,758	$388		
Equation [5]					
Residential RD20 to RD30	$26,404	$26,404	$388		
Mobilehome Park	$27,267	$27,267	$388		
Industrial	$28,664	$28,664	$388		
Commercial (office/retail)	$29,196	$29,196	$388		
Parking Lot	$29,196	$29,196	$388		
Public School Campus [6]	$22,788	$22,788	$388		
School Campus with detention [2]	$11,393	$11,393	$388		
Sports Field graded with field drains	$17,671	$17,671	$388		
Sports Field no piped field drains	$6,771	$6,771	$388		
Sports Field with detention [2]	$3,386	$3,386	$388		
Impervious areas of park [2]	$29,196	$29,196	$388		
[1] The fees are calculated based on the net parcel area plus 20 feet of road width.					
That is, a 1.00 acre parcel fronting 300 feet of a thoroughfare shall pay fees based on					
43560sf + (300' x 20') = 1.138 acre					
[2] Pursuant to Section 2.50.050, a school or park that detains greater than 50% of the					
peak flow volume, at the discretion of Water Resources, may reduce the fee by 50%.					
[3] Beach Stone Lake Volume Mitigation Fee is accounted for separate from Zone 11A.					
[4] Pursuant to Section 2.50.060 the fee is reduced for parcels recorded prior to					
adoption of this Fee Plan. RD5 and larger lots are adjusted to 2003 fee plus 20%.					
[5] Equation- use straight line interpolation.					
[6] Public Schools pay one time as they don't necessarily return to county for additional building permits.					

Table 2
Schedule A Fees – Zone 11B

APPENDIX 1					
DRAINAGE FEE SCHEDULE "A"		Fee Schedule Effective March 3, 2025			
ZONE 11B FEES (per acre)					
LAND USE	**March 2025 Zone 11B Fee (per acre)**	**March 2025 Fee for Parcels Recorded before 8/16/2004 (per acre)**			
Raw Land and Open Space	$0	$0			
Road Right-of-Way, greater than 40' [1]	$0	$0			
Residence on 5.0 acres(+)	$0	$0			
Equation [4]					
Residence on 3.5 acres	$4,811	$942			
Equation [4]					
Residence on 2.0 acres	$9,625	$1,649			
Equation [4]					
Residence on 1.0 acre	$12,834	$3,294			
Equation [4]					
Residence on 0.50 acre	$13,114	$6,592			
Equation [4]					
Residence on 0.25 acre	$14,333	$13,183			
Equation [4]					
Residence on 0.20 acre	$14,704	$14,615			
Equation [4]					
Residence on 0.14 acre	$15,184	$15,093			
Equation [4]					
Residence on 0.10 acre	$16,480	$16,382			
Equation [4]					
Residential RD20 to RD30	$17,587	$17,481			
Mobilehome Park	$19,023	$18,908			
Industrial	$19,023	$18,908			
Commercial (office/retail)	$19,271	$19,156			
Parking Lot	$19,271	$19,156			
Public School Campus [5]	$15,184	$15,093			
School Campus with detention [2]	$7,591	$7,549			
Sports Field graded with field drains	$12,834	$12,757			
Sports Field no piped field drains	$4,811	$4,784			
Sports Field with detention [2]	$2,405	$2,391			
Impervious areas of park [2]	$19,271	$19,156			
[1] The fees are calculated based on the net parcel area plus 20 feet of road width.					
That is, a 1.00 acre parcel fronting 300 feet of a thoroughfare shall pay fees based on					
43560sf + (300' x 20') = 1.138 acre					
[2] Pursuant to Section 2.50.050, a school or park that detains greater than 50% of the					
peak flow volume, at the discretion of Water Resources, may reduce the fee by 50%.					
[3] Pursuant to Section 2.50.060 the fee is reduced for parcels recorded prior to					
adoption of this Fee Plan. RD5 and larger lots are adjusted to 2003 fee plus 20%.					
[4] Equation- use straight line interpolation.					
[5] Public Schools pay one time as they don't necessarily return to county for additional building permits.					

Table 3
Schedule A Fees – Zone 11C

APPENDIX 1					
DRAINAGE FEE SCHEDULE "A"		Fee Schedule Effective March 3, 2025			
ZONE 11C FEES (per acre)					
LAND USE	**March 2025 Zone 11C Fee (per acre)**	**March 2025 Fee for Parcels Recorded before 8/16/2004 (per acre)**	**March 2025 Sheds Flowing to Dry Creek into Placer County (add'l fee/acre)**	**March 2025 Sheds Flowing to Linda Creek (add'l fee/acre)**	**March 2025 Sheds Flowing to NEMDC Tributaries (add'l fee/acre)**
Raw Land and Open Space	$0	$0	$0	$0	$0
Road Right-of-Way, greater than 40' [1]	$0	$0	$0	$0	$0
Residence on 5.0 acres(+)	$0	$0	$0	$0	$0
Equation[5]					
Residence on 3.5 acres	$6,835	$1,000	$76	$299	$424
Equation[5]					
Residence on 2.0 acres	$13,670	$1,750	$133	$522	$456
Equation[5]					
Residence on 1.0 acre	$18,230	$3,495	$266	$1,043	$485
Equation[5]					
Residence on 0.50 acre	$18,772	$6,992	$533	$1,324	$594
Equation[5]					
Residence on 0.25 acre	$21,138	$13,983	$1,064	$1,324	$704
Equation[5]					
Residence on 0.20 acre	$21,865	$17,479	$1,330	$1,324	$758
Equation[5]					
Residence on 0.14 acre	$22,796	$22,796	$1,862	$1,324	$826
Equation[5]					
Residence on 0.10 acre	$24,536	$24,536	$2,026	$1,324	$919
Equation[5]					
Residential RD20 to RD30	$25,987	$25,987	$2,026	$1,324	$995
Mobilehome Park	$26,748	$26,748	$2,026	$1,324	$1,031
Industrial	$28,003	$28,003	$2,026	$1,324	$1,069
Commercial (office/retail)	$28,498	$28,498	$2,026	$1,324	$1,069
Parking Lot	$28,498	$28,498	$2,026	$1,324	$1,069
Public School Campus [6]	$22,796	$22,796	$2,026	$1,324	$826
School Campus with detention [2]	$11,399	$11,399	$2,026	$1,324	$826
Sports Field graded with field drains	$18,230	$3,495	$2,026	$1,324	$485
Sports Field no piped field drains	$6,835	$1,000	$2,026	$1,324	$424
Sports Field with detention [2]	$3,419	$498	$2,026	$1,324	$424
Impervious areas of park [2]	$28,498	$28,498	$2,026	$1,324	$1,069
[1] The fees are calculated based on the net parcel area plus 20 feet of road width.					
That is, a 1.00 acre parcel fronting 300 feet of a thoroughfare shall pay fees based on					
43560sf + (300' x 20') = 1.138 acre					
[2] Pursuant to Section 2.50.050, a school or park that detains greater than 50% of the					
peak flow volume, at the discretion of Water Resources, may reduce the fee by 50%.					
[3] Supplemental fees pursuant to Fee Plan and Chapter 2.75					
[4] Pursuant to Section 2.50.060 the fee is reduced for parcels recorded prior to					
adoption of this Fee Plan. RD5 and larger lots are adjusted to 2003 fee plus 20%.					
[5] Equation- use straight line interpolation.					
[6] Public Schools pay one time as they don't necessarily return to county for additional building permits.					

Table 3
Schedule A Fees – Zone 11A Reduced Fees

APPENDIX 1					
DRAINAGE FEE SCHEDULE "A"		Fee Schedule Effective March 3, 2025			
ZONE 11A REDUCED FEES (per acre)					
	March 2025 Zone 11A Fee for LAGUNA WEST, LAKESIDE, ELLIOTT RANCH SOUTH (per acre)	**March 2025 Zone 11A Fee for Laguna Business Park (Laguna Oaks, Parkside), Calvine-99 SPA (per acre)**			
LAND USE					
Raw Land and Open Space	$0	$0			
Road Right-of-Way, greater than 40' [1]	$0	$0			
Residence on 5.0 acres(+)	$0	$0			
Equation[2]					
Residence on 3.5 acres	$488	$680			
Equation[2]					
Residence on 2.0 acres	$852	$1,188			
Equation[2]					
Residence on 1.0 acre	$1,705	$2,377			
Equation[2]					
Residence on 0.50 acre	$3,413	$4,754			
Equation[2]					
Residence on 0.25 acre	$6,823	$9,506			
Equation[2]					
Residence on 0.20 acre	$8,529	$11,883			
Equation[2]					
Residence on 0.14 acre	$8,646	$12,118			
Equation[2]					
Residence on 0.10 acre	$8,823	$12,472			
Equation[2]					
Residential RD20 to RD30	$9,275	$13,443			
Mobilehome Park	$9,727	$14,416			
Industrial	$10,177	$15,388			
Commercial (office/retail)	$10,628	$16,360			
Parking Lot	$10,628	$16,360			
Public School Campus [3]	$7,021	$10,078			
School Campus with detention	$7,021	$10,078			
Sports Field graded with field drains	$2,843	$3,799			
Sports Field no piped field drains	$2,843	$3,799			
Sports Field with detention	$2,843	$3,799			
Impervious areas of park	$10,628	$16,360			
[1] The fees are calculated based on the net parcel area plus 20 feet of road width.					
That is, a 1.00 acre parcel fronting 300 feet of a thoroughfare shall pay fees based on					
43560sf + (300' x 20') = 1.138 acre					
[2] Equation- use straight line interpolation.					
[3] Public Schools pay one time as they don't necessarily return to county for additional building permits.					

APPENDIX 2 – Schedule D Unit Prices

Table 1
Schedule D Unit Prices

Zone 11 Creditable Facilities	Units	Eff. March 2025 Prices	Revised Unit Prices	Proposed Percent Increase
Pipe Size [1]:				
12"	lf	$47.49	$94.97	100%
15"	lf	$53.00	$106.00	100%
18"	lf	$61.01	$122.03	100%
21"	lf	$69.48	$138.97	100%
24"	lf	$76.15	$152.31	100%
27"	lf	$88.29	$176.59	100%
30"	lf	$90.89	$181.78	100%
33"	lf	$106.76	$213.52	100%
36"	lf	$111.18	$222.35	100%
42"	lf	$152.18	$304.35	100%
48"	lf	$175.18	$350.36	100%
54"	lf	$186.00	$372.00	100%
60"	lf	$207.30	$414.59	100%
66"	lf	$264.18	$528.35	100%
72"	lf	$305.80	$611.60	100%
84"	lf	$305.80	$611.60	100%
96"	lf	$305.80	$611.60	100%
Manhole Size [2]:				
48"	per ea	$4,487.44	$8,974.88	100%
60"	per ea	$6,529.96	$13,059.92	100%
72"	per ea	$8,058.13	$16,116.25	100%
84"	per ea	$9,409.19	$18,818.39	100%
96"	per ea	$11,580.55	$23,161.10	100%
108"	per ea	$12,335.92	$24,671.83	100%
Saddle MH	per ea	$5,790.27	$11,580.53	100%
4" Thick Channel Lining	per sf	$10.52	$15.00	43%
Fencing and Gates:				
3' post and cable	per lf	$16.74	$33.47	100%
Pipe Gate	per ea	$4,523.65	$6,500.00	44%
6' wrought iron with gates	per lf	$32.59	$65.18	100%
6' chain link with gates	per lf	$19.73	$39.47	100%
4' chain link with gates	per lf	$18.24	$36.47	100%
Signs 16 sf or smaller	per ea	$365.27	$730.55	100%
Signs greater than 16 sf	per ea	$547.93	$1,095.85	100%

Table 1 – continued
Schedule D Unit Prices

Zone 11 Creditable Facilities	Units	Eff. March 2025 Prices	Revised Unit Prices	Proposed Percent Increase
Miscellaneous metal (handrails, racks, and flap gates)	per lb	$7.38	$14.77	100%
Channel Excavation [3]	per cy	$5.67	$8.00	41%
Basin Excavation [3]	per cy	$5.33	$7.50	41%
Erosion Control Riprap [4]:				
Class 1 backing rock	per ton	$54.29	$108.57	100%
Class 2 backing rock	per ton	$57.90	$115.79	100%
1/4 ton	per ton	$63.33	$126.66	100%
Cobble	per ton	$57.90	$115.79	100%
GeoWeb - rock weir	per ton	$56.62	$113.24	100%
Access and Maintenance Roads:				
1" thick asphalt concrete	per sf	$0.66	$1.00	51%
1" thick aggregate base	per sf	$0.41	$0.60	45%
1" thick decomposed granite	per sf	$0.53	$0.70	31%
Geotextile fabric	per sf	$0.29	$0.50	71%
Repair Surfaces:				
Asphalt concrete patch paving	per sf	$12.69	$18.00	42%
Hydroseed	per acre	$2,536.69	$5,000.00	97%
Miscellaneous Concrete [5]:				
Junction box	per cy	$1,510.89	$3,021.77	100%
Headwall	per cy	$1,510.89	$3,021.77	100%
Stairway	per cy	$1,510.89	$3,021.77	100%
Flat pad	per cy	$904.72	$1,809.44	100%
Ramp	per cy	$904.72	$1,809.44	100%
Driveway	per cy	$904.72	$1,809.44	100%
Weir Structure	per cy	$904.72	$1,809.44	100%
[1] Smaller pipe sizes are often used for basin outlets				
[2] Manhole unit price is complete including rim and lid				
[3] Same unit price regardless of method of transport				
[4] Riprap class is based on historical Caltrans Specifications				
[5] Concrete unit price includes rebar, structure excavation and backfill, sub-base material and grading				

APPENDIX 3 – Development Impact Analysis

This appendix includes the development impact analysis performed in the 2004 Fee Plan. This appendix was carried forward included in the 2015 Fee Plan and is being carried forward in this Fee Plan to provide background on how fees were developed and distributed across the various land uses.

Parts:

- Commercial versus Residential Pipe Standards.
- Channel Impact (peak flow)
- Basin Impact (flood and water quality volume)
- Reduce Fee for Parks and Schools

Commercial versus Residential

The County Improvement Standards have two pipe design curves, residential and commercial. Commercial includes dense residential and industrial, while the residential curve is used for parks and schools. The following will compare these two design curves to determine the appropriate weighting of the total estimated cost of trunk pipe drainage. Consider a fictitious square 240-acre drainage shed in Nolte zone 3:

Figure A3 – Pipe Schematic

Total estimated Cost of Trunk Pipe Drainage Calculations

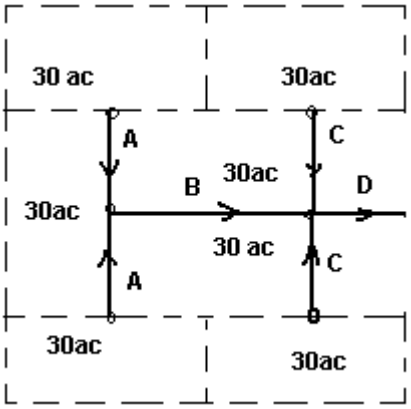


Table A3 – Nolte Method Design Flow and Pipe Size

Zone 3 "Nolte Method"						
Pipe	Length (ft)	Watershed Size	Residential		Commercial	
			Nolte Flow	Pipe Size	Nolte Flow	Pipe Size
A	1616	30 acre	7.5 cfs	21"	15 cfs	27"
B	1616	90 acre	32 cfs	36"	42 cfs	42"
C	1616	30 acre	7.5 cfs	21"	15 cfs	27"
D	808	210 acre	106 cfs	54"	124 cfs	60"

Table B3 – Nolte Method Design Flow and Pipe Size

Residential					Commercial				
Size	Length	unit	Unit Price[1]	Cost	Size	Length	unit	Unit Price[1]	Cost
21"	3232	ft	$152.31	$492,266	27"	3232	ft	$176.59	$570,738.88
36"	1616	ft	$222.35	$359,318	42"	1616	ft	$304.35	$491,829.60
54"	808	ft	$372.00	$300,576	60"	808	ft	$414.59	$334,988.72

1 March 2025 Unit Prices

The total commercial cost is about 21% greater than the residential cost.

Channel Impacts

To determine the channel component impact of various development types based on impervious area, a small shed area of 160 acre was considered. This shed area seems to be typical of pipe conveyance to an open channel. The peak 100-year flow for the average imperviousness (41.94% per Table D3) was used to compare the peak flow impact of each type of development ranging from 15% to 90% impervious area.

Table C3 – HEC-1 Output

Impervious Area	100-Year Peak Flow (cfs)
5%	158.5
15%	246.1
20%	255.3
30%	279.2
40%	296.1
50%	306.4
60%	321.5
70%	333.8
80%	346.4
90%	358.6
notes:	
1. Sacpre Zone 2 at elevation 100'	
2. 160-Acres of Soil C	
3. L= 2,640', L_c=1,320'	

HEC-1 output, for various impervious area percentages, is contained in Table C3 for a 160-acre square shed with soil type C, a slope of 0.50%, at elevation 100 feet. The weighted impact is determined by centering over the 41.94% impervious area "average development", 298.1 cfs (interpolated) peak flow.

Table D3 – Peak 100-Year Flow for the Average Imperviousness

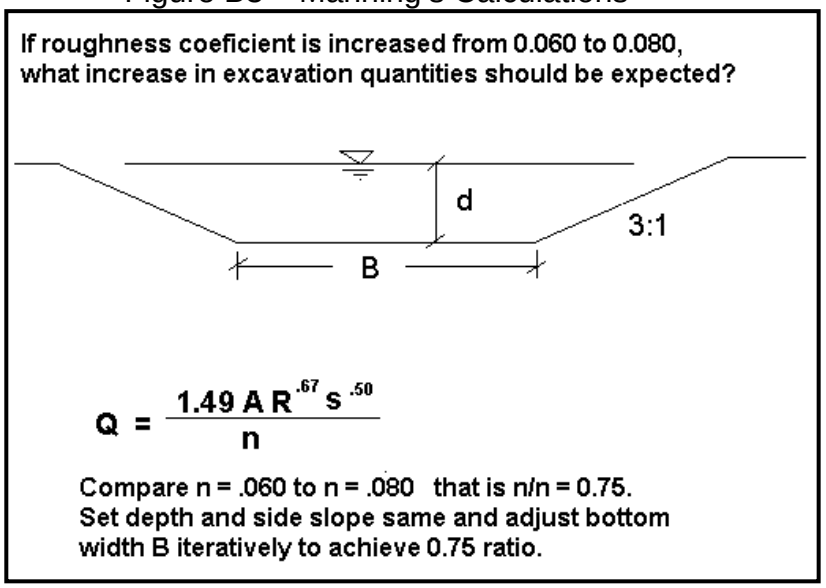
% Impervious Area	Peak Flow (cfs)	Volume Exceeding 10-yr (ac-ft)	Channel Impact	Volume Impact
15%	246.1	1.23	82.55%	55.04%
20%	255.3	1.40	85.64%	62.87%
30%	279.2	1.88	93.68%	84.29%
40%	296.1	2.19	99.32%	98.24%
50%	306.4	2.39	102.80%	107.32%
60%	321.5	2.65	107.86%	119.19%
70%	333.8	2.87	111.98%	128.80%
80%	346.4	3.09	116.20%	138.62%
90%	358.6	3.29	120.29%	147.60%

For example, if the entire 160-acre shed is made up of development that is 20% impervious, the peak flow is 255.3 cfs which is 85.64% (255.3 ÷ 298.1) of the peak flow impact compared to what it would be if the area was all developed at 41.94% imperviousness. Likewise, if it is all developed at 80%, the impact is 116.20% of that of the average development. These results are tabulated in Table D3.

Impact of increased Manning's n-value.

Due to various state and federal wildlife regulations and a desire of many to maintain drainage channels and creeks to a minimum level to allow for habitat, and pursuant to the updated County Improvement Standards, the Manning's roughness coefficient (n-value) will typically be 0.080. This is an increase from the previous 0.060 that was used as a basis for the 1996 Fee Plan channel component.

Figure B3 – Manning's Calculations



Starting with a bottom width B1 and calculating the wetted perimeter P1 and the hydraulic cross sectional area A1 and the area times the 2/3 root of the hydraulic radius (R1) then by iterating B2 until the resultant ratio of A times the 2/3 root of R is 0.75, one may solve for the cross sectional area A2 and determine the increased excavation quantity, due to increasing the Manning's n-value from 0.060 to 0.080 (described in Figure B3). Table D3 is a compilation of channels 6 feet and 8 feet deep with bottom widths of 10 feet to 100 feet.

In the first example, a 6' deep channel is 10 feet wide at the bottom if n=0.060. Increasing n to 0.080 increases the bottom width to 17.3' and the cross sectional area by 26% (B2 was manually input into the Excel spreadsheet until the ratio on the right came to 0.75).

Looking at the comparisons on Table E3, the average is (1.31+1.31+1.28+1.29+1.26+1.26)/6 = 1.29. Therefore, it is found that there is an average 29% increase in the cost of channel excavation quantities due to increasing Manning's n-value from 0.060 to 0.080. It is noted that not every channel will be built at 0.080, but there will be an overall proportionate increase in roughness coefficients for constructed channels.

Table E3 – Compilation of Channels

Bottom Width		Area		Wetted Perimeter		$AR^{0.67}$	Ratio
Depth 6'							
B1=	10.0	A1 =	168.0	P1=	46.0	400.1	
B2=	17.3	A2=	211.8	P2=	53.3	533.8	0.75
			126.0%				
B1=	50.0	A1=	408.0	P1=	86.0	1,157.9	
B2=	70.0	A2=	528.0	P2=	106.0	1,548.3	0.75
			129.0%				
B1=	100.0	A1=	708.0	P1=	136.0	2,138.4	
B2=	136.0	A2=	924.0	P2=	172.0	2,850.2	0.75
			131.0%				
Depth 8'							
B1=	10.0	A1=	272.0	P1=	58.0	766.0	
B2=	18.8	A2=	342.4	P2=	66.8	1,023.5	0.75
			126.0%				
B1=	50.0	A1=	592.0	P1=	98.0	1,975.4	
B2=	71.0	A2=	760.0	P2=	119.0	2,632.3	0.75
			128.0%				
B1=	100.0	A1=	992.0	P1=	148.0	3,548.9	
B2=	138.0	A2=	1296.0	P2=	186.0	4,758.6	0.75
			131.0%				

Volume Impacts

To determine the volume impact of various development types based on impervious area, a small shed of 160-acre was considered, as it was for channel impacts. The 100-year flow was calculated using the Sacramento Method and HEC-1 software assuming soil type C, 0.50% slope, elevation 100' and a square 160-acre drainage shed area in Sacramento hydrology zone 2.

One may assume that in almost every case the 10-year flow can be conveyed without consequence. Volume impacts, therefore, are not a concern until a storm exceeds the 10% annual recurrence level. For this study, the Sacramento 10-year flow was calculated and the volume above this flow was determined (see Table F3).

The countywide average impervious area (Table D3) of 41.94% contributes 2.23 acre feet (interpolated) of volume above the 10-year flow. The impact of a range of impervious area percentages was developed centered around this average. That is, if the 160-acre shed is developed at 15% impervious area, the volume impact is 55.0% of that of the average development. While an 80% impervious development is 38.6% greater than the average (3.09AF ÷ 2.23AF).

It is recognized that not every shed will require peak flow attenuation; however, this comparison is deemed appropriate when considering how to best spread the cost of volume mitigation over an entire Zone.

Possible Reduced Fee for Parks and Schools

The following is a comparison of impacts from the spreadsheets titled Summary of Component Impact for Zones 11A, 11B, and 11C. Schools and parks typically fall within the 20% to 50% impervious area range. As one can see, the average impact exceeds 50%. This serves to justify the reduction in fees when schools and parks include peak flow and volume attenuation in their grading plans, pursuant Section 2.50.050.

Table F3 –Peak 100- Summary of Component Impact

	PEAK FLOW	VOLUME	BASIN REAL ESTATE	SUM
50% Impervious Area				
11A	21.00	15.75	32.10	68.85
11B	23.76	11.24	17.54	52.54
11C	47.67	9.79	21.03	78.49
Average	30.81	12.26	23.56	66.63
20% Impervious Area				
11A	17.49	9.23	18.80	45.52
11B	19.79	6.58	10.28	36.65
11C	39.72	5.73	12.52	57.97
Average	25.67	7.18	13.87	46.71
Average 20% and 50% Imp Area				
11A	19.25	12.49	25.45	57.19
11B	21.78	8.91	13.91	44.60
11C	43.70	7.76	16.78	68.23
Average	28.24	9.72	18.71	56.67

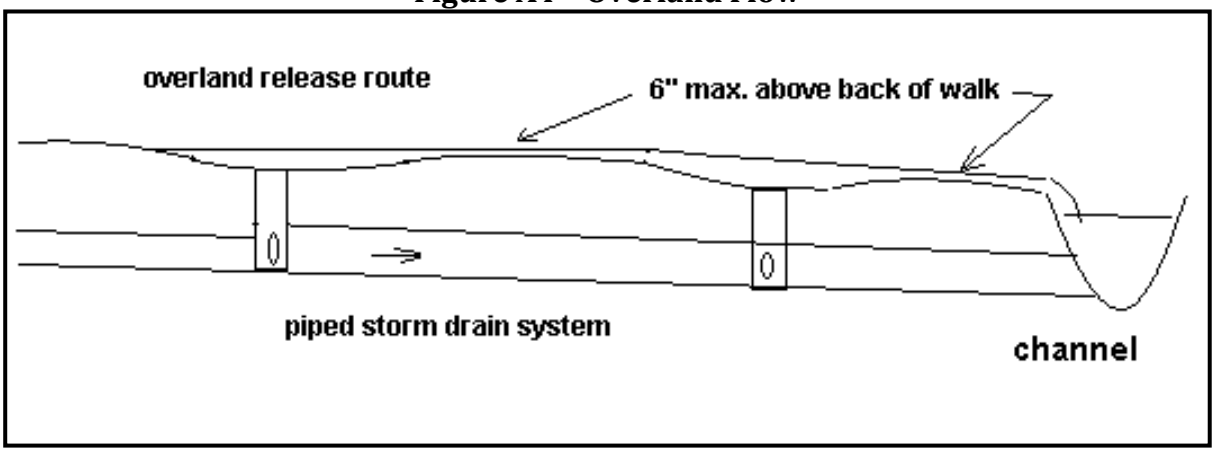
APPENDIX 4 – Pipe Sizing Analysis

This appendix includes the pipe sizing analysis performed in the 2004 Fee Plan. This appendix was carried forward and included in the 2015 Fee Plan and is being carried forward in this Fee Plan to provide background on how fees were developed and distributed across the various land uses.

Impact of Section 9-16C on Pipe Sizes

Pipes are designed to convey a finite flow; however, sometimes nature delivers bigger storms. During these high intensity storms, piped storm drain systems may become overwhelmed. Inlets surcharge, storm water ponds in low areas until they are full and flows over land to creeks, streams, basins, channels and ditches. The depth of the over-land flow in the street can be calculated and the building can safely be constructed above the 100-year water surface; however, there is a concern about the depth of flowing water in a street (see figure below). In the 2002 revision to the Drainage Improvement Standards, the Department of Water Resources added Section 9-16C, as follows:

Figure A4 – Overland Flow



Overland flow passing over street vertical curves shall not exceed a depth of six inches over the back of walk.

Flow versus depth was calculated using normal flow and Manning's Equation. This relationship for a 40' wide street right of way is graphically represented in Figure B4, "Overland Release 40' Right of Way half section street flow". This is presented in Table B4.

Manning's equation was used, assuming normal flow in full pipes, to determine pipe sizes based on the Sacramento County Improvement Standards (aka. the Nolte runoff curves). The 100-year curves in the Sacramento City/County Volume 2 Hydrology Standards were used to determine the 100-year runoff. Table A4 is a list of various shed areas, the design capacity of the trunk pipe and the 100-year storm runoff, for the purposes of this comparison.

The goal of this section is to determine in what topographic areas Section 9-16C has the most impact, requiring increased pipe size and to what extent this may be an additional cost in the Fee Plan.

Figure B4 – Overland Release

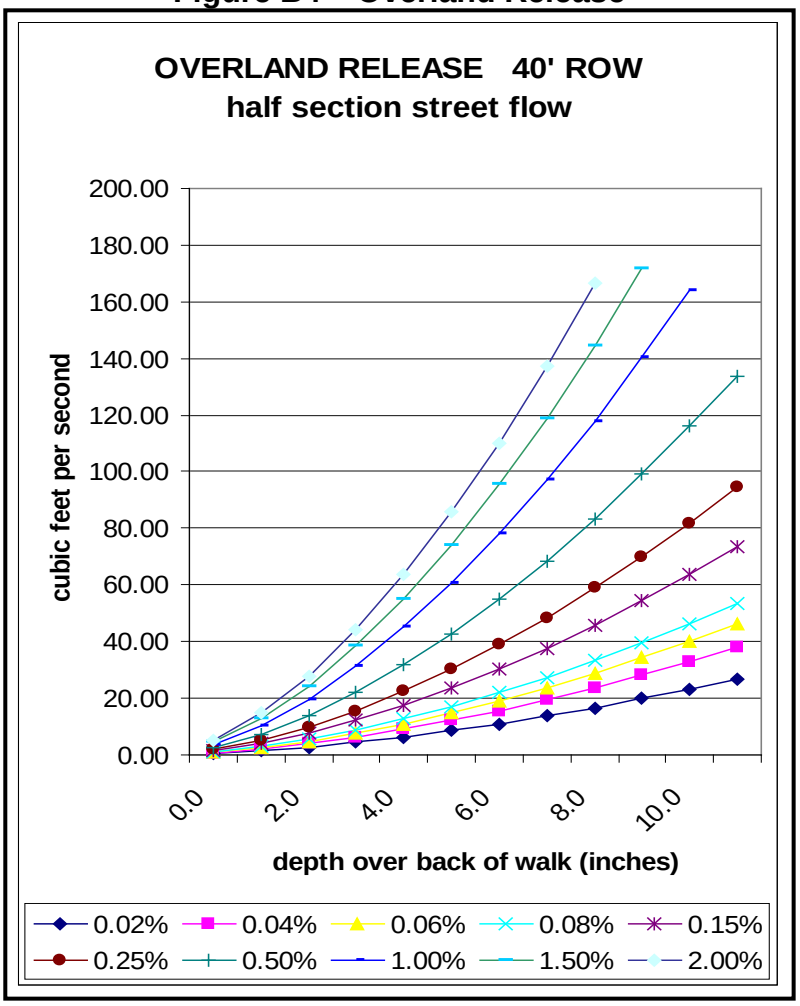
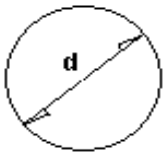


Figure C4 – Estimated Pipe Capacity



Full flow pipe, no pressure, normal flow conditions

$$Q = \frac{1.49\ A\ R^{.67}\ s^{.50}}{n} \quad \rightarrow \quad d = \left(\frac{Q}{30.82\ s^{.5}} \right)^{0.375}$$

Manning's n = .015
Q = flow in pipe (cfs)
A = cross sectional area (sf)
R = wetted perimeter A/p
p = pipe circumference (ft)
s = longitudinal slope (ft/ft)

Figure D4 – Nolte Chart

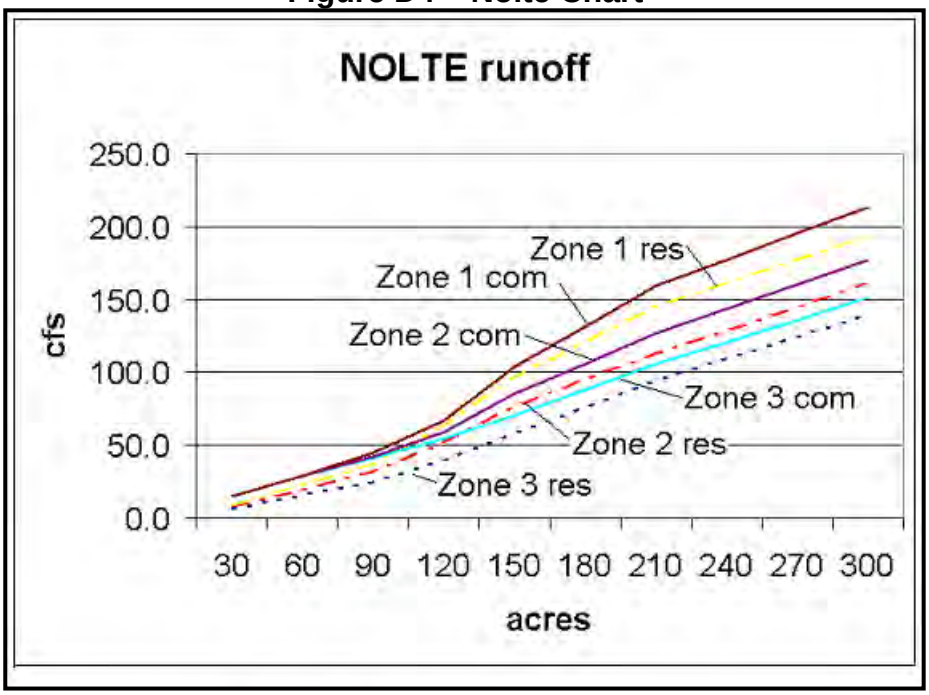


Table A4 – Flow min Pipe

Acres	Flow Nolte (zone 3)	100-yr	Overland (cfs)
20	6.0	23.2	17.2
40	12.0	46.4	34.4
60	18.0	69.6	51.6
80	24.0	92.8	68.8
100	30.0	116.0	86.0
120	36.0	139.2	103.2
140	42.0	140.0	98.0
160	48.0	160.0	112.0
180	54.0	171.0	117.0
200	60.0	182.0	122.0
220	66.0	200.2	134.2
240	72.0	218.4	146.4
260	78.0	236.6	158.6
280	84.0	249.2	165.2
300	90.0	255.0	165.0

Table B4 – Flow vs Depth

(40’ Street right of way)

BOW (inch)	T (ft)	Q (cfs) per Longitudinal Slope									
		0.02%	0.04%	0.06%	0.08%	0.15%	0.25%	0.50%	1.00%	1.50%	2.00%
0.0	13.1	0.69	0.98	1.20	1.39	1.90	2.45	3.46	4.90	6.00	6.93
0.0	13.1	0.53	0.75	0.92	1.06	1.45	1.88	2.65	3.75	4.59	5.30
1.0	15.2	1.48	2.09	2.56	2.96	4.05	5.22	7.39	10.45	12.80	14.78
2.0	15.2	2.79	3.95	4.84	5.59	7.65	9.88	13.97	19.76	24.20	27.94
3.0	15.2	4.43	6.27	7.68	8.86	12.14	15.67	22.16	31.34	38.38	44.32
4.0	15.2	6.36	9.00	11.02	12.73	17.42	22.50	31.81	44.99	55.10	63.63
5.0	15.2	8.56	12.11	14.83	17.13	23.46	30.28	42.82	60.56	74.17	85.65
6.0	15.2	11.02	15.59	19.09	22.05	30.19	38.97	55.12	77.95	95.46	110.23
7.0	15.2	13.73	19.41	23.77	27.45	37.59	48.53	68.63	97.05	118.86	137.25
8.0	15.2	16.66	23.56	28.86	33.32	45.62	58.90	83.30	117.80	144.28	166.60
9.0	15.2	19.82	28.03	34.33	39.64	54.28	70.07	99.09	140.14	171.64	198.19
10.0	15.2	23.19	32.80	40.17	46.39	63.52	82.00	115.97	164.01	200.87	231.94
11.0	15.2	26.78	37.87	46.38	53.56	73.34	94.68	133.90	189.36	231.92	267.80

NOTE: Cross slope =2.00%; Half of 40' wide street section; Back of Walk (BOW)

The following examples assume constant slopes, flat super elevations, normal flow and neglecting ponding, but the serve well for comparison purposes.

Example #1: A 100 acre residential drainage shed, in Nolte Zone 3, must pipe 30cfs while the 100-year runoff is 116cfs. The remaining 86 cfs must flow overland, down the gutter at 43cfs on each side. This flow can be conveyed at a depth less than 6” in the gutter if the longitudinal slope is greater than about .31%. However, if the slope is flatter, a large pipe will have to be installed to reduce the overland flow.

Example #2: For a sample 160-acre shed, the excess runoff in 100-year storm is 56.0 cfs flowing down each gutter. In this case, the longitudinal slope must be greater than 0.54%. If the slope is only 0.15%, the depth above back of walk is calculated at 9.2”; therefore, a larger pipe will be required.

Tables C4 is a compilation of pipe design flows (Nolte Method) for fictitious shed areas using impervious area of 50% in zone 3 (Figure 2-6 and 2-9 of the Sacramento City/County Hydrology Standards). The 100-year flow was taken from the charts for Sacramento Method (Figures 2-20 and 2-21 of the Hydrology Standards). Notice that 'Nolte' and Sacramento Method have different 'zones' (see maps, Figures 2-4 and 2-11 of the Hydrology Standards).

Subtracting the 100-year flow from the pipe design flow and dividing by two gives the half street flow. Comparing this flow to Table B4 and interpolating, gives the required longitudinal street slope if the flow is to be limited as required by Section 9-16C of the Improvement Standards. Assuming the pipe flow is normal and the pipe is sloped parallel with the street, the pipe size is determined (not used in these calculations other than to indicate the range of trunk pipes being considered). One might reasonably assumes that a typical pipe outfall is 48" diameter, in this example serving 160-acres. At a slope of 0.32% the 100-year flow can be safely conveyed to the open channel. This is typical in Zones 11B and 11C, but Zone 11A is often flatter.

Table C4 – Pipe Design Flow

(Nolte Method)

Acres	**Q** *In The Pipe* **(zone 3)**	**100-yr**		**Overland (cfs)**	**Q cfs** *(Half Street)*	**Required Slope at 6"**	**Pipe Size** *Normal Flow* **(in.)**
40	8.0	52.0		44.0	22.0	0.08%	27.6
60	15.0	70.0		55.0	27.5	0.13%	32.0
80	22.0	88.0		66.0	33.0	0.18%	32.8
100	29.0	105.0		76.0	38.0	0.24%	35.4
120	40.5	122.0		81.5	40.8	0.28%	40.1
140	52.0	137.5		85.5	42.8	0.31%	43.1
160	67.0	153.0		86.0	43.0	0.32%	47.1
180	80.0	169.0		89.0	44.5	0.34%	49.9
200	93.0	185.0		92.0	46.0	0.37%	51.9
220	101.6	199.5		97.9	49.0	0.41%	52.7
240	110.2	214.0		103.8	51.9	0.45%	53.4
260	118.8	227.3		108.5	54.3	0.49%	54.0
280	127.4	240.7		113.3	56.6	0.53%	54.5
300	136.0	254.0		118.0	59.0	0.59%	54.9
400	214.5	315.5		101.0	50.5	0.43%	69.0
450	254.0	346.0		92.0	46.0	0.36%	75.9
500	293.0	377.0		84.0	42.0	0.30%	83.1

NOTE: 50% impervious area; Sacramento County Zone 2

Table D4 summarizes the results with street flow limits (from Table B4) for comparison with various longitudinal slopes. For example, a 100-acre shed area has a pipe designed to convey 29cfs and a 100-year runoff flow of 105cfs, the half street flow is 38cfs requiring a slope of

.25% to safely convey. Looking at a larger shed area of 220 acres, the pipe conveys 101.6cfs and the half street 100-year overland flow is 49.0cfs, requiring a slope steeper than .38%. Table E4 provides additional example calculations of the effect of 'Section 9-16C.' As one considers the typical shed areas, one can deduce that if the slope is flat, less than 0.25%, the "typical" shed outfall pipe will have to be enlarged to convey more flow and to reduce overland flow in the street. Table F4 compares the effect of '9-16C' on trunk drainage cost in various specific plan areas.

Table D4
Summary Results with Street Flow Limits

Acres	Nolte Q (cfs)	Q *half street* (overland) (cfs)	Q *half street - 6" flow* (cfs)	
40	8.0	22.0		
60	15.0	27.5	0.06%	19.1
80	22.0	33.0	0.08%	22.1
100	29.0	38.0	0.15%	30.2
120	40.5	40.8	0.25%	39.0
140	52.0	42.8	0.38%	47.0
160	67.0	43.0	0.50%	55.1
180	80.0	44.5		
200	93.0	46.0		
220	101.6	49.0		
240	110.2	51.9		
260	118.8	54.3		
280	127.4	56.6		
300	136.0	59.0		
400	214.5	50.5		
450	254.0	46.0		
500	293.0	42.0		

Table E4 – Compare Piped Storm Drainage
(Nolte Method)

Compares piped storm drainage required per the proposed revision to Section 9-16C of the Improvement Standards

Longitudinal Slope of Storm Drain Pipe and Street			
	0.15%	0.25%	0.50%
30" pipe conveys (cfs) [1]	13	17	22
Serving (acres) [2]	59	77	100
Q-100yr (cfs) [3]	69	82	103
Max. Q-Street (cfs) [4]	60	80	110
Req'd Q pipe (cfs)	9	2	-
Pipe size Diameter (in) [1]	30"	30"	30"
48" pipe conveys (cfs) [1]	47	60	85
Serving (acres) [2]	132	152	187
Q-100yr (cfs) [3]	131	145	175
Max. Q-Street (cfs) [4]	60	80	110
Req'd Q pipe (cfs)	71	65	65
Pipe size Diameter (in) [1]	55	49	48"
54" pipe conveys (cfs) [1]	65	83	118
Serving (acres) [2]	159	185	258
Q-100yr (cfs) [3]	155	172	223
Max. Q-Street (cfs) [4]	60	80	110
Req'd Q pipe (cfs)	95	92	113
Pipe size Diameter (in) [1]	62	56	54"
60" pipe conveys (cfs) [1]	83	110	150
Serving (acres) [2]	185	235	333
Q-100yr (cfs) [3]	172	210	279
Max. Q-Street (cfs) [4]	60	80	110
Req'd Q pipe (cfs)	112	130	169
Pipe size Diameter (in) [1]	66	63	60"

[1] Assuming normal flow using Manning's equation

[2] Using Sacramento County Design Runoff Curve "Nolte Method" Zone 3 Residential

[3] From Sacramento Method Chart Zone 2 at 50% impervious (note that reference to Zone 2 and 3 above are because the pipe design map than the county hydrology map use different zone designations).

[4] Using Table B, assuming standard 2% cross slope and 6" deep over back of walk, normal flow equal on both sides of the street, neglecting ponded volume in the sag areas.

Table F4 – Effect of Proposed Overland Release

Revision Section 9-16C of The Improvement Standards (Rev December 2002)

Assuming every pipe is in a 40' wide street section with the street as the primary overland release route. (Quantities under old standard)								
Average Pipe Size	East Franklin	Laguna Stonelake	North Vineyard Sta.	Vineyard Springs				
(in)	(ft)	(ft)	(ft)	(ft)	Total (ft)	Priced as Average	2004 Unit Price	Cost
30-33	6320	4302	7298	2,550	20,470	30to33"	$ 54.62	$ 1,118,071
36	8340	1772	8724	650	19,486	36"	$ 61.44	$ 1,197,220
42	6660	585	3745	480	11,470	42"	$ 84.10	$ 964,627
48-54	14720	4752	7505	1,000	27,977	48-54"	$ 99.80	$ 2,792,105
60	11580	2652	5230	7,250	26,712	60to72"	$ 114.56	$ 3,060,127
							Total Cost	$ 9,132,150
Quantities if limit overland flow to 6" over back of walk								
	East Franklin	Laguna Stonelake	North Vineyard Station	Vineyard Springs				
inch	feet	feet	feet	feet	feet			
30-33	6320	4302	7298	2,550	20,470	30-33"	$ 54.62	1,118,071
42	8340	1772	8724	650	19,486	42"	$ 84.10	1,638,773
48	6660	585	3745	480	11,470	48"	$ 96.80	1,110,296
60	14720	4752	7505	1,000	27,977	60"	$ 114.56	3,205,045
66	11580	2652	5230	7,250	26,712	66"	$ 146.00	3,899,952
								$ 10,972,137
Estimated increase in trunk pipe due to proposed overland release revision, only in flat areas Zone 11A:								20.1%

It is recognized that pipe size increase is not always necessary and not all of Zone 11A is topographically flat; nevertheless, the impact of this standard is measurable. Reviewing East Franklin, Laguna Stonelake, North Vineyard Station, and Vineyard Springs Specific Plan Areas, pursuant to 9-16C, it was found that large diameter pipes in topographically flat areas will have to be upsized to reduce the 100-year flow in the street, see Table E. For example, a 48" pipe will serve 187 acres if the slope is 0.5%, but if the slope is 0.15% the same 187 acres will require a 66" diameter pipe. Table F concludes that the anticipated impact due to Section 9-16C is 20.1%.

In addition to Section 9-16C of the Improvement Standards, the reader is directed to the introductory paragraph under Section 9-16 in which the design engineer is required to limit the depth of ponding in the street to no more than 8" over back of walk, in the 100-year storm. When considering both of these standards, and the fact that it is desired to maintain passable collector streets in case of emergency, one should be reassured that pipe sizes should increase in many locations.

Recognizing that short of doing a detailed drainage master plan for the build out of Zone 11A, one is left with a decision of how to handle this apparent need for increase in pipe size. Based on review of the USGS quad map and the aforementioned design standards, it is agreed that the increase should be 56% [as calculated by Bill Owens, County DWR staff, on 8/18/03] of the 26% calculated increase (Table F); therefore a multiplier of 20.1% x .56 = 11.3% is used as an addition to the sum of the estimated trunk pipe costs in Zone 11A.

APPENDIX 5 – Revenue vs. Expense Past Five Years

Below are revenue, expense, and cash flow statements for each Zone. This analysis will be kept current and the appendix updated annually.

Table A5 – Zone 11A Revenue vs. Expenses

(Zone 11A Summary Past 5-Years)

Zone 11A	Actual FY20-21	Actual FY21-22	Actual FY22-23	Actual FY23-24	Estimate FY24-25
Revenue	$4,623,013	$6,327,501	$5,818,338	$5,839,352	$4,750,349
Expenses	$5,586,062	$9,711,280	$7,070,832	$3,672,694	$3,814,805
Balance	$28,945,834	$25,309,366	$23,801,161	$26,476,220	$27,411,764

Table B5 – Zone 11B Revenue vs. Expenses

(Zone 11B Summary Past 5-Years)

Zone 11B	Actual FY20-21	Actual FY21-22	Actual FY22-23	Actual FY23-24	Estimate FY24-25
Revenue	$294,151	$216,189	$263,234	$263,833	$366,361
Expenses	$382,117	$399,363	$508,528	$347,345	$621,855
Balance	$3,629,080	$3,435,086	$3,103,356	$2,957,257	$2,801,0730

Table C5 – Zone 11C Revenue vs. Expenses

(Zone 11C Summary Past 5-Years)

Zone 11C	Actual FY20-21	Actual FY21-22	Actual FY22-23	Actual FY23-24	Estimate FY24-25
Revenue	$396,813	$265,774	$274,787	$420,752	$505,752
Expenses	$1,572,119	$435,458	$967,460	$637,119	$938,212
Balance	$6,799,641	$6,945,111	$7,477,174	$7,878,366	$8,375,864

.

APPENDIX 6 – Projection of Revenue vs Expenses

This analysis will be kept current and the appendix updated.

Zone 11A

The Elder Creek and Gerber Creek improvements described in the North Vineyard Station Drainage Master Plan are permitted under the Clean Water Act and the work will be reimbursement heavy for the first several years.

There are many other opportunities for development in this fee zone and there is no accurate way to estimate which developments will go first and how the fee revenue versus reimbursement expenses will occur. Section 2.60 requires amortization of large reimbursement agreements so the actual yearly cash flow may not be as shown.

Zone 11A accumulated a significant fund balance during the building boom of 2002 to 2007 and held those funds through the recession years of 2008 to 2013, and through the recent years of steady development. Development is expected to continue within the North Vineyard Station and Florin Vineyard Gap plan areas and is expected to begin in the next five years within the Newbridge, Jackson Township, Cordova Hills, Mather and West Jackson Highway plan areas. The new development areas require installation of large trunk drainage facilities, potentially bearing significant reimbursement exposure. Later development projects will infill and pay a greater percentage of the Zone 11A fee in cash. These projections should be monitored each year as budgets are prepared.

Table A6 – Zone 11A Five Year Projection

Zone 11A projection	Total Estimate Trunk Drainage Credit Agreement Amount					
	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31
No. Vineyard Station/ Florin Vineyard	$4,311,605	$1,811,605	$1,811,605	$1,811,605	$1,811,605	$1,811,605
Vineyard Springs	$300,000	$200,000	$200,000	$100,000	$100,000	$100,000
Elk Grove	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
Infill Developments	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000
Newbridge			$1,000,000	$1,000,000	$500,000	$500,000
Jackson Township			$1,000,000	$1,000,000	$500,000	$300,000
Cordova Hills		$1,000,000	$500,000	$500,000	$500,000	$500,000
West Jackson Highway				$1,000,000	$1,000,000	$1,000,000
Mather Specific Plan			$1,000,000	$1,000,000	$500,000	$300,000
Sum Trunk Credit Estimate	$4,961,605	$3,361,605	$5,861,605	$6,761,605	$5,261,605	$4,861,605
Credits increased 100% by Revised Schedule D	$9,923,209	$6,723,209	$11,723,209	$13,523,209	$10,523,209	$9,723,209
Estimated Credits Used (70%) [1]	$6,946,247	$4,706,247	$8,206,247	$9,466,247	$7,366,247	$6,806,247
Estimated Reimbursement	$2,976,963	$2,016,963	$3,516,963	$4,056,963	$3,156,963	$2,916,963
Cash Fee Revenue (infill) [2]	$3,064,159	$3,064,159	$3,064,159	$3,064,159	$3,064,159	$3,064,159

Notes

[1] Assumed 70% of fees covered by credits with remaining shown as reimbursement

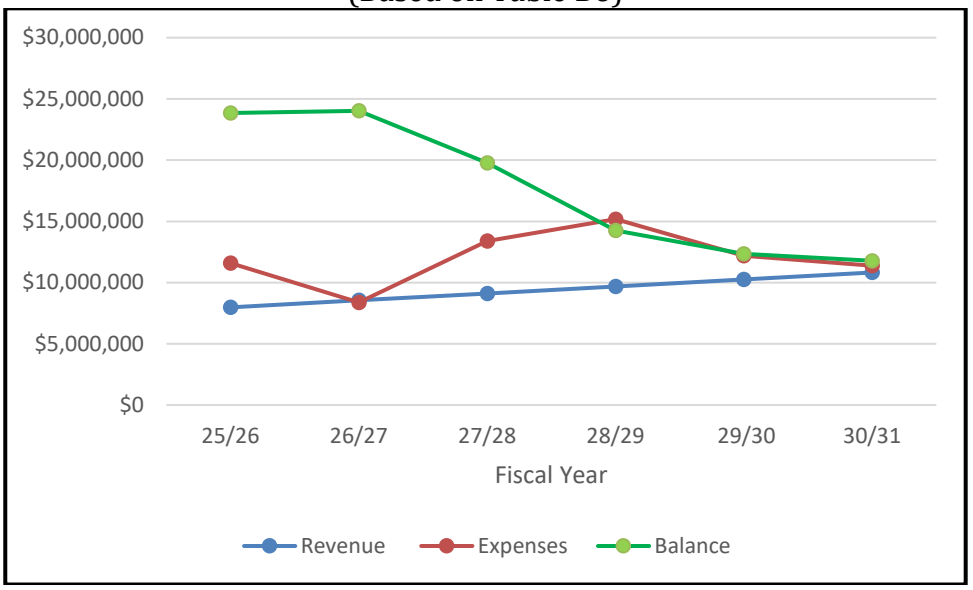
[2] Estimated Fees from development plus 10%

Projection estimates based on the assumptions described above. Table B6 and Figure A6 will be maintained annually, and this appendix will be edited.

Table B6 – Zone 11A Revenue vs. Expenses
(5-Year Projection)

Zone 11A	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31
Revenue	$7,975,800	$8,545,500	$9,115,200	$9,684,900	$10,254,600	$10,824,300
Expenses	$11,580,101	$8,380,101	$13,380,101	$15,180,101	$12,180,101	$11,380,101
Balance	$23,857,426	$24,022,825	$19,757,923	$14,262,722	$12,337,221	$11,781,419

Figure A6 – Zone 11A Projection Chart
(Based on Table B6)



Zone 11B

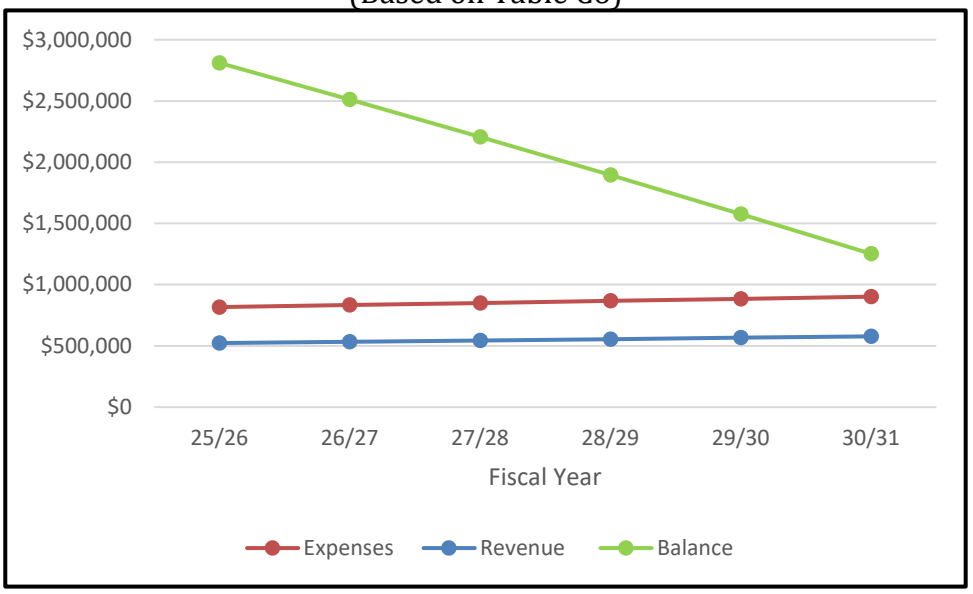
Development opportunities in Zone 11B are limited to infill and redevelopment. Fees are charged for calculated increases to impervious area, consequently, there will be a revenue stream continuing over the next many years for the smaller infill projects. As there are very little credits anticipated to be granted in Zone 11A, most budget expenses are related to plan review. Projected revenue and expenses are based on actual revenue and expenses over the last five years.

The projections should be monitored year over year to assure that the fund balance does not sink too low.

Table C6 – Zone 11B Revenue vs. Expenses
(5-Year Projection)

Zone 11B	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31
Revenue	$523,242	$533,706	$544,381	$555,268	$566,374	$577,701
Expenses	$816,913	$833,251	$849,917	$866,915	$884,253	$901,938
Balance	$2,810,730	$2,511,185	$2,205,649	$1,894,002	$1,576,123	$1,251,886

Figure B6 – Zone 11B Projection Chart
(Based on Table C6)



Zone 11C

The largest proposed development in Zone 11C is the Elverta Specific Plan. There are also opportunities to continue residential development in East Antelope and Barrett Ranch, and the area of Fox Creek. Zone 11C has much unimproved commercial and industrial land that may infill over time.

The fund balance is currently healthy, however, if development activity picks up in the fee zone the fund balance may begin to sink.

For the purposes of this analysis, the reimbursements are assumed to be 30 percent of the trunk drainage cost, and cash fee revenue is estimated to grow at a steady rate. Section 2.60 requires amortization of large reimbursement agreements so the actual yearly cash-flow may not be as shown.

It is important to watch this fund very carefully as the Elverta Specific Plan project breaks ground. The timing of development of the Elverta Specific Plan area is uncertain, but to be conservative it assumed to start in FY26/27 with installation of the larger drainage features during the first five years.

Table D6 – Zone 11C 5-year Projections

Zone 11C projection	Total Estimate Trunk Drainage Credit Agreement Amount					
	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31
Elverta Specific Plan	$0	$2,681,875	$2,681,875	$2,681,875	$2,681,875	$1,787,917
Other Areas of Development	$0	$50,000	$50,000	$50,000	$50,000	$50,000
Sum Trunk Credit Estimate	$0	$2,731,875	$2,731,875	$2,731,875	$2,731,875	$1,837,917
Credits increased 100% by Revised Schedule D	$0	$5,463,750	$5,463,750	$5,463,750	$5,463,750	$3,675,833
Estimated Credits Used (70%) [1]	$0	$3,824,625	$3,824,625	$3,824,625	$3,824,625	$2,573,083
Estimated Reimbursement	$0	$1,639,125	$1,639,125	$1,639,125	$1,639,125	$1,102,750
Cash Fee Revenue (infill)[2]	$0	$4,299,955	$4,299,955	$4,299,955	$4,299,955	$2,866,636

Notes
[1] Assumed 70% of fees covered by credits with remaining shown as reimbursement
[2] Fees based on projected development in the Elverta Specific Plan Area

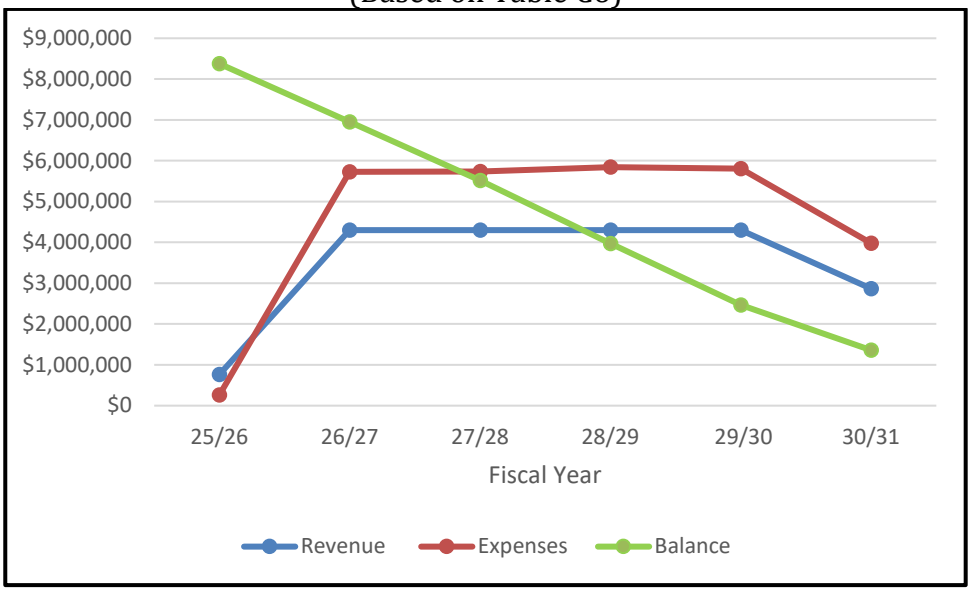
Table E6 – Zone 11C Revenue vs. Expenses

(5-Year Projection)

Zone 11B	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31
Revenue	$763,331	$4,299,955	$4,299,955	$4,299,955	$4,299,955	$2,866,636
Expenses	$260,347	$5,724,584	$5,733,597	$5,842,739	$5,804,884	$3,978,064
Balance	$8,375,864	$6,951,234	$5,517,591	$3,974,807	$2,469,878	$1,358,450

Figure C6 – Zone 11C Projection Chart

(Based on Table C6)



Appendix 7 - History of Zone 11

Drainage Fee

Figure A7 – Zone 11A Fee History

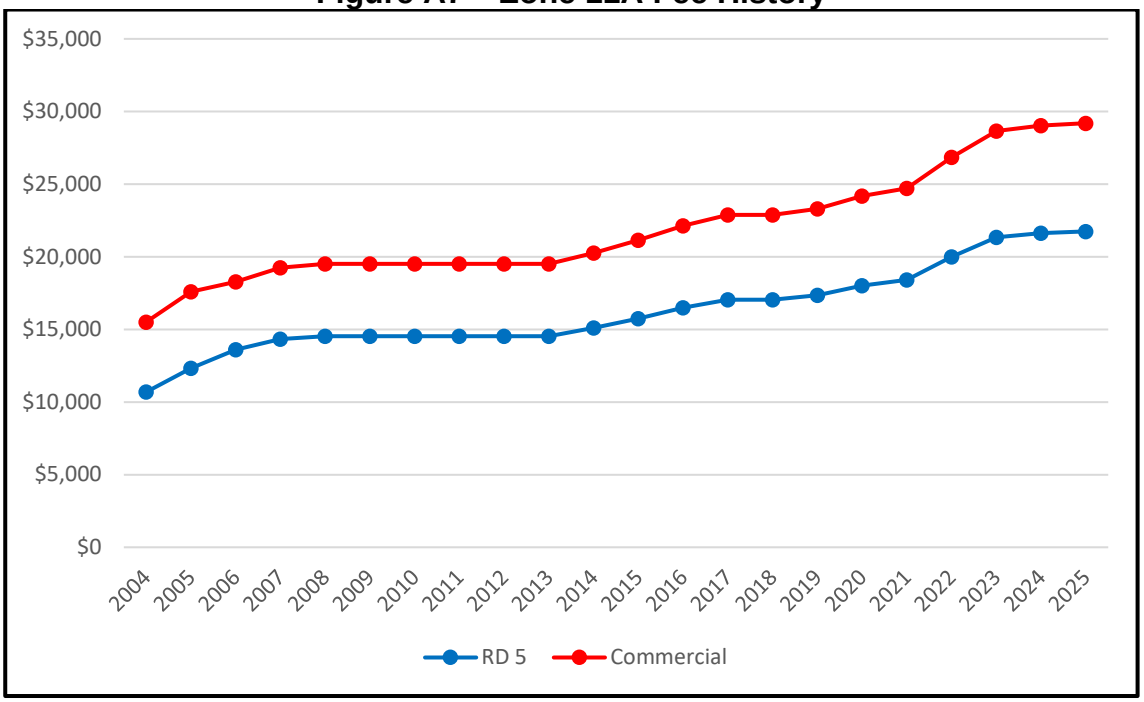


Figure B7 – Zone 11B Fee History

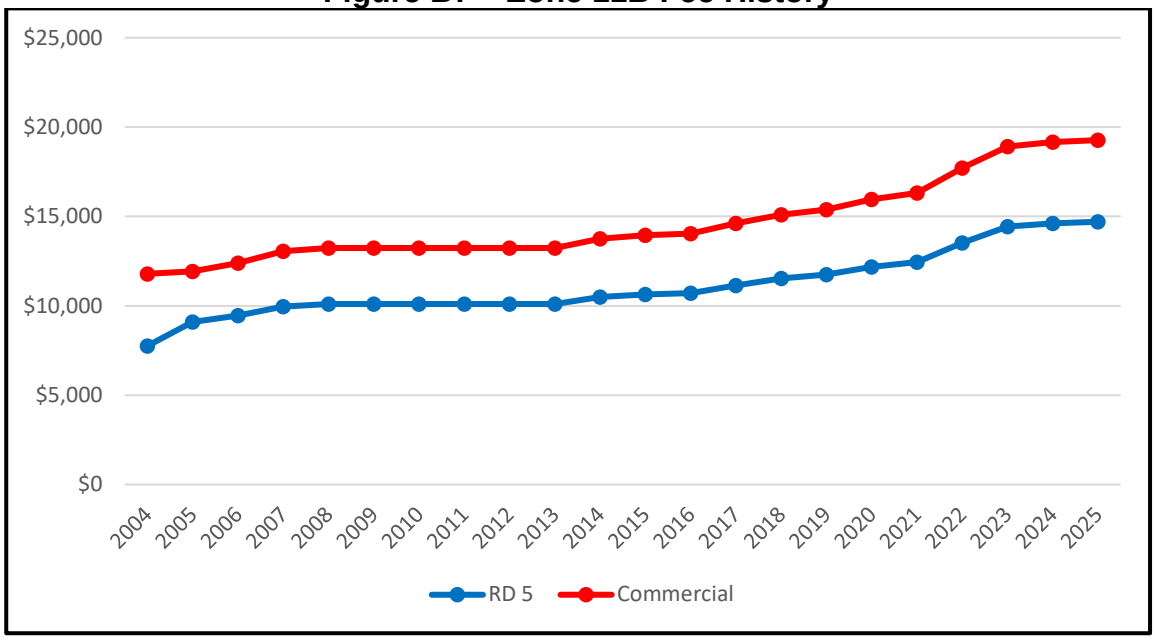
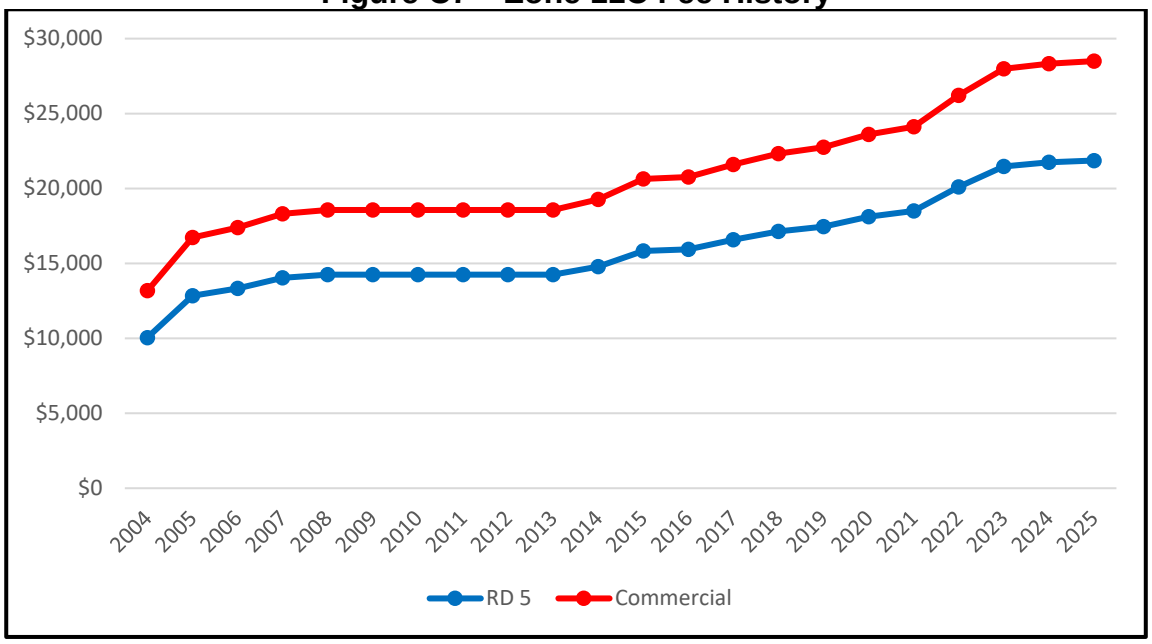


Figure C7 – Zone 11C Fee History



Typical Credit (unit price)

Figure D7 – 36” Pipe Credit (ft)

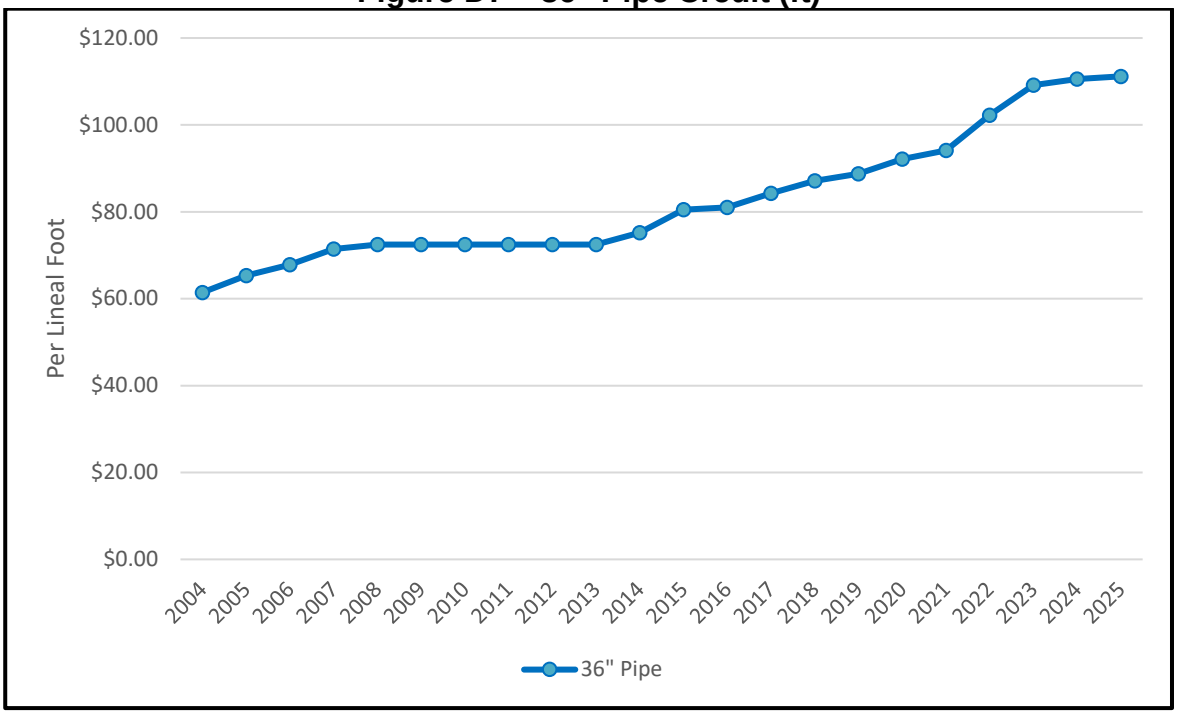


Figure E7 – 72” Standard Manhole Credit (ft)

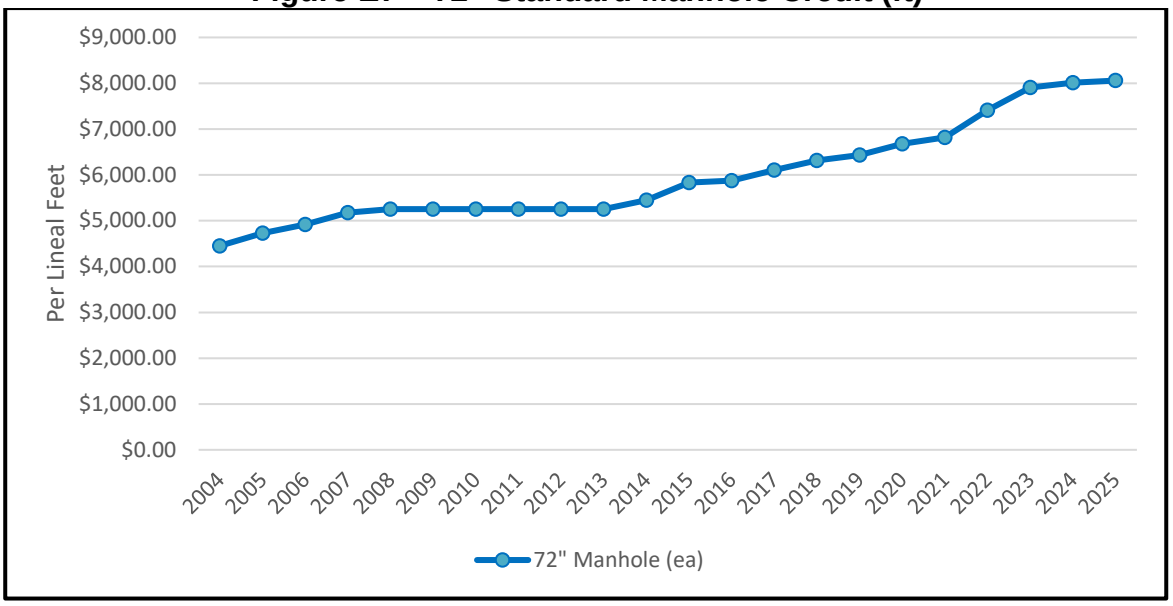
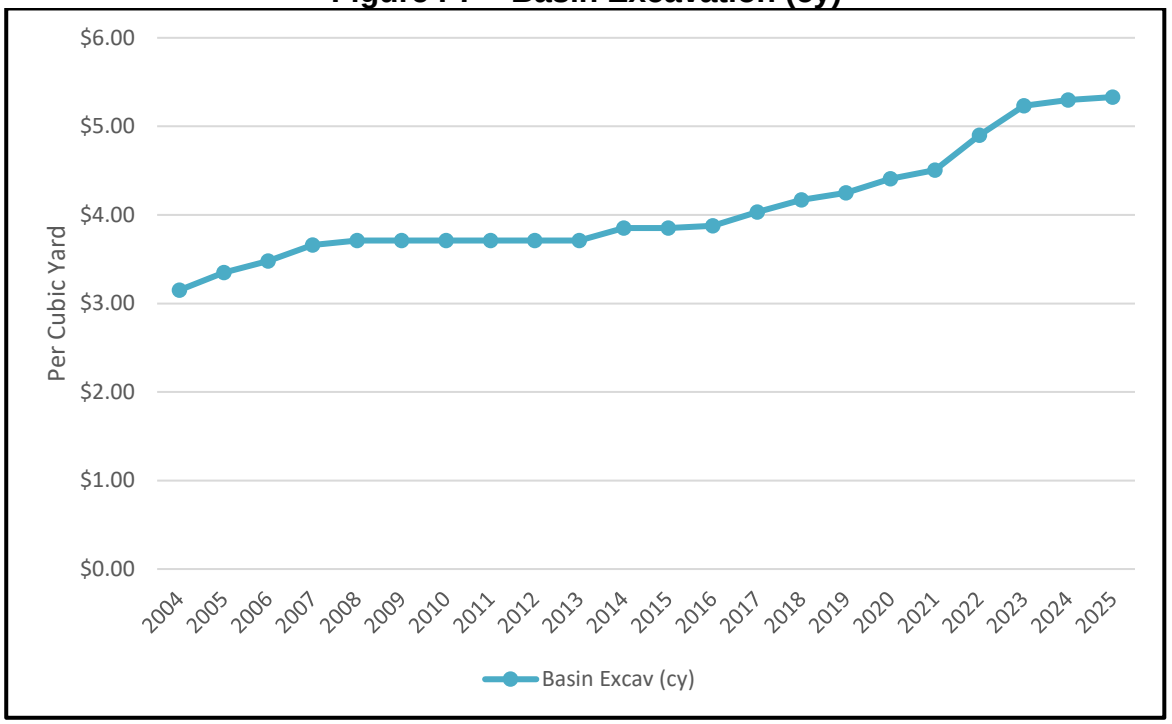


Figure F7 – Basin Excavation (cy)

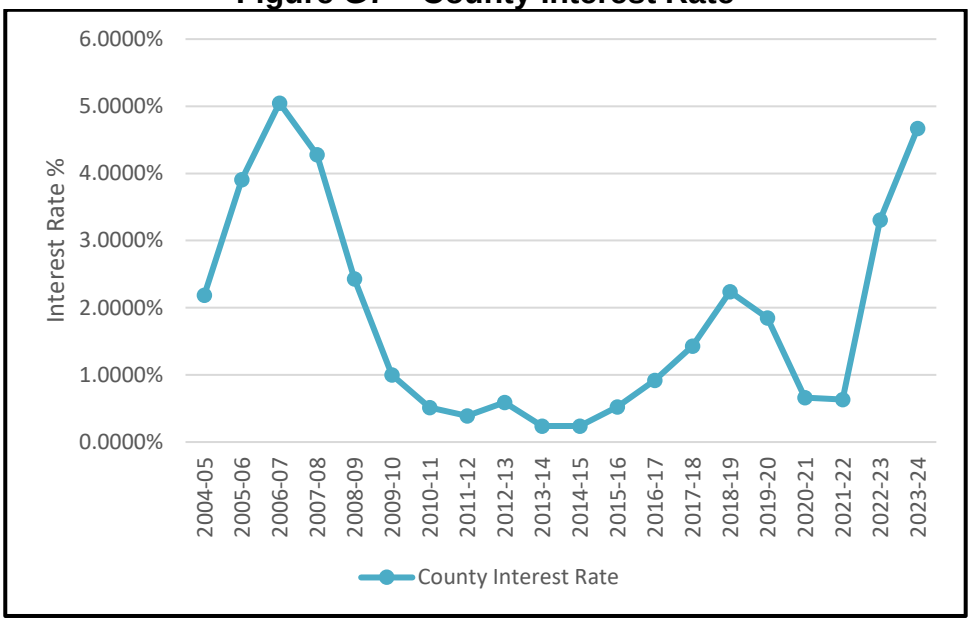


History of County Pooled Interest

Table A7 – History of Interest Rate

Fiscal Year	Interest Rate
2004-05	2.1873%
2005-06	3.9096%
2006-07	5.0494%
2007-08	4.2776%
2008-09	2.4310%
2009-10	0.9978%
2010-11	0.5128%
2011-12	0.3901%
2012-13	0.5900%
2013-14	0.2388%
2014-15	0.2388%
2015-16	0.5231%
2016-17	0.9214%
2017-18	1.4288%
2018-19	2.2406%
2019-20	1.8473%
2020-21	0.6598%
2021-22	0.6348%
2022-23	3.3085%
2023-24	4.6719%

Figure G7 – County Interest Rate



Appendix 8 Assignment of Credit Agreement Template

The following template for assignment of drainage Credit Agreements describes the simplicity of the assignment while each party should assure that the form is adequate for their purposes.

ASSIGNMENT OF DRAINAGE CREDITS [DRAFT]

This Assignment ("Assignment") is made this ____ day of 2_____ by and between _____, a _____ ("Assignor") and _____ a _____ corporation ("Assignee"), with reference to the following facts:

A. WHEREAS, Assignor is the owner of that certain real property located in the County of Sacramento, State of California commonly known as "_____", Assessor's Parcel Number _____ and more particularly described on Exhibit "A" to the Purchase Agreement and attached (the "Property").

B. WHEREAS, an agreement for trunk drainage credits for Zone 11___ was signed by the Assignor, dated _____ and by the Director of the Sacramento County Department of Water Resources, dated _____, (the "Credit Agreement") pursuant to the Sacramento County Water Agency Code Titles I and II (the "Code").

C. WHEREAS, the Credit Agreement lists quantities of estimated trunk drainage facilities to be adjusted based upon project completion, pursuant to the Code.

D. WHEREAS, pursuant to a Purchase and Sale Agreement dated _____, as amended (the "Purchase Agreement"), Assignor has agreed to sell to Assignee all of Assignor's rights, title and interests in and to the Property, including, but not limited to Assignor's right, title, and interest to certain drainage credits applicable to the Property pursuant to the Credit Agreement.

E. WHEREAS, Assignor and Assignee desire to enter into this agreement to confirm the assignment by Assignor to Assignee of all the Assignee's rights to drainage credits and the Credit Agreement applicable to the Property.

NOW, THEREFORE, in consideration of the mutual covenants of the parties herein, and for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. **Assignment By Assignor.** Pursuant to _____ of the Purchase Agreement, Assignor hereby unconditionally sells, transfers and presently assigns the Credit Agreement to Assignee, without warranty or recourse (except as otherwise provided in this

Assignment), all of Assignor's rights, title and interest in and to the drainage credits applicable to _____ and pursuant to the terms of the Credit Agreement.

2. **Indemnity.** Assignor agrees to indemnify the Sacramento County Water Agency and the County of Sacramento and its employees against all liability, claims, damages, losses, costs, or expenses, including attorney fees and court costs, relating to the drainage credits applicable to the Credit Agreement, this Assignment, and the Purchase Agreement.

3. **Further Assurances.** Whenever requested to do so by the other party, each party shall execute, acknowledge and deliver any further conveyances, assignments, confirmations, satisfactions, releases, powers of attorney, and any further instruments or documents that are necessary, expedient, or proper to complete any conveyances, sales and assignments contemplated by this Assignment. In addition, each party shall do any other acts and execute, acknowledge, and deliver any requested documents in order to carry out the intent and purpose of this Assignment.

4. **Governing Law.** This Assignment is made and entered into the State of California and shall be interpreted, construed and enforced in accordance with the laws of the State of California.

5. **Binding Effect.** This Assignment shall apply to, bind, and inure to benefit of Assignor and Assignee, and their respective heirs, legal representatives, successors and assigns.

IN WITNESS WHEREOF, this Assignment has been executed as of the date first above written.

ASSIGNOR:

By: _____

Its: _____

ASSIGNEE:

By: _____

Its: _____

[signatures shall be notarized]